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06 ALBANY, N. Y. JANUARY–FEBRUARY 1918

e University of the State of New York
New York State Museum

JOHN M. CLARKE, *Director*
HOMER D. HOUSE, *State Botanist*

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ALBANY
THE UNIVERSITY OF THE STATE OF NEW YORK
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The University of the State of New York

Science Department, October 1, 1918

Dr Thomas E. Finegan
Acting President of the University

DEAR DOCTOR FINEGAN:

I transmit to you herewith for publication as a bulletin of the State Museum, the Annual Report of the State Botanist, Homer D. House, for the year ending June 30, 1918.

Very respectfully yours

JOHN M. CLARKE

Director

THE UNIVERSITY OF THE STATE OF NEW YORK
OFFICE OF THE PRESIDENT

Approved for publication this 25th day of October 1918

Thos. E. Finegan

Acting President of the University

New York State Museum Bulletin

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Nos. 205-206 ALBANY, N. Y. JANUARY-FEBRUARY 1918

The University of the State of New York

New York State Museum

JOHN M. CLARKE, *Director*
HOMER D. HOUSE, *State Botanist*

REPORT OF THE STATE BOTANIST 1917

John M. Clarke
Director, Science Department

SIR:

I beg to communicate herewith my report on the work of the State Botanist's office for the fiscal year 1917.

Very respectfully
HOMER D. HOUSE
State Botanist

Scientific investigations. The investigative work of the State Botanist during the season of 1917 has been limited to a study of the flora of certain sections of the central and western counties of the State. Early in the season several days were spent in a study of the vegetation of southern Herkimer county, a region of numerous small lakes, bogs and swamps, and the home of several rare species of plants. A visit was also made to Fourth Lake in northern Herkimer county, and further investigations were made upon the vegetation of several sphagnum bogs through the counties of Oswego, Cayuga, Wayne, Seneca, Monroe and Genesee. At all the localities visited collections were made for the state herbarium.

A large number of fungi, ferns and flowering plants were collected during the year, many of which were new to the state flora. The ferns and flowering plants of particular interest are reported under " Local Flora Notes " and the fungi under " Notes on Fungi." A large number of fungi, some of recent collection, but most of them undetermined species collected by Doctor Peck and others, were studied and identified in collaboration with Prof. John Dearness and reported under " New and Interesting Species of Fungi."

Considerable progress has been made in the compilation of a list of New York fungi, which will also include an arrangement according to the host plants which they inhabit in the case of those saprophytic and parasitic species which are found upon definite hosts.

Memoir on the Wild Flowers of New York. The photographic work for this project was practically completed in 1916, and during the past year it was necessary to secure additional photographs of only a few subjects. The manuscript was completed in 1917 and there remains now only the completion of the engraving and printing. It is expected that this will be finished before the publication of this report. The great amount of detail connected with this undertaking has made it necessary to curtail to a large extent new investigations of a scientific nature.

Noteworthy contributions to the state herbarium. The chief additions to the state herbarium during the past year in the form of contributions and exchanges are presented in the following list of contributors, which also indicates the number of specimens received from each:

	SPECIMENS
Bonaparte Herbarium, Paris, France	245
Gray Herbarium, Harvard University	236
Prof. D. L. Crawford, Claremont, Cal	165
John Hurley, Little Falls	130
Prof. L. O. Overholts, State College, Pa	86
Dr James R. Weir, Missoula, Mont	53
Miss M. K. Smith, Estes Park, Col	35
E. P. Killip, Rochester	40
Dr J. J. Davis, Madison, Wis	22
Dr W. Haydon, Marshfield, Ore	20
A. H. Larson, Carter, Mont	20
Douglas M. White, Rochester	20
C. J. Musante, Tule River, Cal	16
S. H. Burnham, Hudson Falls	12
W. A. Matthews, Rochester	11
Roy Latham, Orient	10
Olaf O. Nylander, Caribou, Maine	10
Caroline C. Haynes, Highlands, N. J	9
James E. Barkeley, Grahamsville	2
Charlotte Bogardus, Coxsackie	1
Mrs E. P. Gardner, Canandaigua	1
Simon Davis, Brookline, Mass	1
F. V. Rand, Washington, D. C	1
Total	1146

Condition of the collections. With the aid of the assistant botanist, Louis Robbins, it has been possible to continue the rearrangement of the material in the herbarium, making it more accessible for study, and in addition to the mounting of the current collections, exchanges and contributions, a large number of valuable specimens of the Sheldon herbarium (presented in 1914) have been mounted and placed in the herbarium. Further progress in definitely marking the many type specimens has been made.

Additions to the herbarium. The number of specimens which have been added to the herbarium from all sources during the past year is 1457. Of these, 1146 were received in exchange or as contributions. Three hundred eleven specimens were collected by the staff in the counties of Albany, Cayuga, Erie, Essex, Franklin, Hamilton, Madison, Monroe, Nassau, Niagara, Oneida, Otsego, Ontario, Onondaga, Rensselaer, Saratoga, Seneca, Queens, Wayne and Warren. The number of species added which were new to the herbarium was 128, which includes 33 specimens of ferns and flowering plants of the northeastern states and 95 species of fungi.

Identifications. The State Botanist's office has been called upon to identify and report upon 437 specimens of plants, including many fungi. These identifications were asked for by 108 different persons.

PLANTS ADDED TO THE HERBARIUM

The policy of giving a detailed list of all species mounted and added to the state herbarium, which has characterized the State Botanist's reports for many years, is now discontinued, and the following list contains only the names of the species added to the herbarium during 1917 which were not hitherto represented in our collections. Of the many species of flowering plants received, which were new to our collections, only those from the northeastern United States are listed.

Ferns and Flowering Plants New to the Herbarium

Agalinis acuta *Pennell*
Agropyron acadiense *Hubbard*
Antennaria cana *Fernald*
" neodioica gaspensis *Fernald*
Astragalus blakei *Eggleston*
Bidens colpophila *Fernald & St John*
" eatonii kennebecensis *Fernald*
Carex oronensis *Fernald*
" projecta x scoparia *Fernald*
" tenuiflora x trisperma *Fernald*
Dryopteris goldiana x marginalis *Dowell*
Erechtites megalocarpa *Fernald*
Euphrasia americana *Wettst*
" arctica *Lange*
" purpurea *var.* farlowii (*Rob.*) *Fernald & Wiegand*
" randii *Robinson*
Eriocaulon parkeri *Robinson*
Glyceria fernaldii (*Hitchc.*) *St John*
Juncus pervetus *Fernald*
Kobresia elachycarpa *Fernald*
Lactuca canadensis *var.* montana *Britton*
Lesquerella arctica *var.* purshii *Wats.*
Odontites odontites (*L.*) *Wettst.*
Pleurogyna rotata (*L.*) *Griesb.*
Proserpinacea intermedia *Mackenzie*
Puccinellia fasciculata (*Torr.*) *Bicknell*
" alaskana *Scribn. & Merrill*
Salix glaucophylloides *Fernald*
Scirpus longii *Fernald*
Scutellaria churchilliana *Fernald*
Veronica teucrium *Linn.*
Xyris arenicola *Small*

Fungi New to the Herbarium

Aleuria rhenana *Fckl.*
Anthostoma peckii *D. & H.*
Anthostomella picaceum (*C. & E.*) *Sacc.*
Asterella fraxinina *D. & H.*
Asterstroma cervicolor (*B. & C.*) *Massee*
Aylographum onocleae *D. & H.*
Camarosporium dichomeroides *Brun.*
Catinula turgida *Desm.*
Ceracea corticicoides (*E. & E.*) *Pat.*
Ceratostoma avocetta (*C. & E.*) *Sacc.*
Cladosporium molle *Cooke*
Colletotrichum helianthi *Davis*
Coniophora vaga *Burt*
Corticium alutaceum (*Schrad.*) *Bres.*
" atrovirens *Berk.*
" centrifugum (*Lev.*) *Bres.*
" confluens *Fries*
" epigaeum *E. & E.*
" pezizoideum *E. & E.*
" polyporoideum *B. & C.*
" scutellare *B. & C.*
" stramineum *Bres.*
" vagum *B. & C.*

Cylindrosporium ceanothi *E. & E.*
" crataegi *E. & E.*
Dendrophoma variabilis *D. & H.*
Diaporthe artospora *D. & H.*
" spiculosa (*A. & S.*) *Nitsch.*
Diatrypella minutispora *Dearness*
" missouriensis *E. & E.*
Dimerosporium echinatum *E. & E.*
Dothiorella hicoriae *D. & H.*
Eutypa crustata (*Fr.*) *Sacc.*
Gloniella ovata (*Cooke*) *Sacc.*
" parvulata *D. & H.*
" vaccinicola *D. & H.*
Gloeosporium castanopsidis *D. & H.*
" hedericolum *Maublanc*
Glonium pruni *D. & H.*
Glutinium exasperans *Fries*
Gymnosporangium kernianum *Bethel*
Helicosporium nymphaearum *Rand*
Humaria peckii *House*
Hypochnus olivascens (*B. & C.*) *Burt*
" spongiosus (*Schw.*) *Burt*
" subferruginosus *Burt*
" subvinosus *Burt*
Illosporium coccinellum *Cooke*
Labrella celastri *D. & H.*
Laestadia caricis *D. & H.*
" smilaciniae *D. & H.*
Leptothyrium castanicolum *E. & E.*
Leptostromella chenopodii *D. & H.*
Leptosphaeria acuta (*M. & N.*) *Karst.*
Lophiostoma insidiosum (*Desm.*) *C. & E.*
Macrophoma ulmicola *Dearness*
Melanomma inspissum (*Schw.*) *Cooke*
Metasphaeria squamata (*C. & E.*) *Sacc.*
Midotis irregularis (*Schw.*) *Sacc.*
Mycena filopes (*Bull.*) *Quel.*
Mycosphaerella opuntiae (*E. & E.*)
Mytilidion fusisporum (*Cooke*) *Sacc.*
Nigredo occidentalis (*Diet.*) *Arth.*
Odontia nivea (*Karst.*)
Ovularia bistortae (*Fckl.*) *Sacc.*
Peniophora affinis *Burt*
" arachnoidea *Burt*
" laevis (*Fr.*) *Burt*
" peckii *Burt*
" pubera (*Fr.*) *Burt*
" praetermissa (*Karst.*) *Burt*
" sordida *Karst.*
" velutina (*DC.*) *Cooke*
Phlyctaena arcuata *Berk.*
Phragmidium occidentale *Arth.*
Phyllosticta alcides *Sacc.*
" amicta *E. & E.*
" gaultheriae *E. & E.*
" omphaleae *D. & H.*
" salicicola *Thum.*
" tiarellae *Dearness*
Pseudoplectania nigrella (*Pers.*) *Fckl.*
Puccinia epilobi-tetragonis (*DC.*) *Wint.*
" seymouriana *Arth.*
" veronicarum *DC.*
Puccinastrum sparsum (*Wint.*) *Ed. Fisch.*
Ramularia aequivoca (*Ces.*) *Sacc.*
Rhizopogon occidentalis *Zeller & Dodge*
Rosellinia obtusissima (*B. & C.*) *Sacc.*
Scleroderris fuliginosa (*Pers.*) *Karst.*
Scolectotrichum cardui *Schroet.*
Septoria araliae *E. & E.*
" hedeomae *D. & H.*
Sphaeropsis ellisii *Sacc.*
" hedericola (*Speg.*) *Sacc.*
Sporodesmium naviculum *D. & H.*
Stereum erumpens *Burt*
" ochraceoflavum *Schw.*
Tympanis buchsii (*Henn.*) *Rehm*
" laricina (*Fckl.*) *Sacc.*
Valsa variolaria (*Schw.*) *Cooke*
Valsaria toxici (*Schw.*) *Sacc.*
Vermicularia sambucina *E. & D.*
Winterina crustosa *E. & E.*

A SMALL COLLECTION OF PLANTS FROM CENTRAL NEW YORK, COLLECTED BY DR ASA GRAY, 1832

A small but most interesting and valuable addition to the state herbarium during the past year, consists of a collection of about 130 specimens of plants collected and carefully labeled by Dr Asa Gray in 1832. They appear to have been collected chiefly near Utica. The following letter from the donor, Mr John Hurley, president of the New York State Board of Pharmacy, contains all that is known of their history.

Little Falls, N. Y.
May 7, 1917

John M. Clarke, Ph. D.
Director's Office, Education Bldg.
Albany, N. Y.

MY DEAR SIR:

Your letter of May 4th at hand Saturday morning, and it gives me great pleasure to note that the botanical collection sent you met with your hearty approval.

I would state that some fifteen years ago my partner, Mr O'Rourke, purchased a house and lot for a residence for himself (in Little Falls), and while doing some repairs to that house I strolled into the attic one day and I noticed a bundle on the floor wrapped in a newspaper. I brought the same to the store and upon investigation it was found to contain the botanical specimens just as I sent it to you.

In the 1830's, this house was owned and occupied by one Mr William Brooks, a prominent lawyer and a man possessed of some money. Mr Brooks had two sons, one William jr, the other Thaddeus. Dr Asa Gray, who at that time resided in Utica, was a great friend of William Brooks jr and made many visits to his home in this city. From the Brooks homestead he would roam over the hills and mountains taking in places like Richfield Springs, Cherry Valley, Paine's Hollow and other places surrounding Little Falls, for the purpose of collecting specimens of botanical herbs.

On many of these occasions William Brooks jr would accompany Professor Gray on his exploring trips searching for new and fresh specimens. There is no doubt but that Professor Gray intended to transport these specimens to his original collection in the city of Utica, and of course why they were left in the Brooks home, there is no one left of that family to tell the story. The Brooks family, consisting of two brothers and two sisters, have passed away.

However, the neighbors remembered very well the circumstances of the visits and stays of Professor Gray with the Brooks family. These specimens were collected while Professor Gray was a teacher in the city of Utica, and were in the Brooks house from the time they were dated until some fifteen years ago when Mr O'Rourke purchased the residence for a home for himself and sisters. Since that time I have had them in my possession.

I trust that this information will cover your inquiry, and I assure you that if there is anything further that I can tell you about this collection I will be only too glad to do so and to assist you in every way possible. Hoping that this will prove satisfactory, with my kindest regards, I am,

Very truly yours

John Hurley

The inference to be drawn from this letter to Doctor Clarke, that the plants were collected near Little Falls and inadvertently left in the Brook's house, is not borne out by the labels accompanying the specimens. All excepting about a dozen were collected at or near Utica during the month of May 1832. A very few were collected at Little Falls, Paris and other localities.

A glance at the list of species, shows that the bundle contained a fairly representative collection of plants which bloom during May in the vicinity of Utica, and it is quite possible that the collection represents a set of common flowering plants of that season which Professor Gray presented to some member of the Brooks family. This assumption is further borne out by the fact that the specimens are not very ample, but just a small or fairly good specimen of each species. There are also very few duplicates and very few rare species, if we except Collinsia verna, which in those days was said to be common near Utica, but is now a rare plant in our flora.

Following is a list of the species represented, using the names of current botanical literature:

Actaea alba
“ rubra
Acer spicatum
Anemone quinquefolia
“ canadensis
Arisaema triphyllum
Asplenium felix-foemina
Bicuculla cucullaria
Capnoides sempervirens
Carex bullata
“ bromoides
“ crinita
“ deweyana
“ diandra
“ folliculata
“ flexuosa
Carex flava
“ festucacea
“ granularis
“ canescens
“ gracillima
“ swanii
“ hystricina
“ hirtifolia
“ echinata
“ laxiflora
“ lasiocarpa
“ lupulina
“ livida
“ leptalea
“ lacustris
“ oligocarpa

Carex platyphylla
“ prasina
“ pallescens
“ careyana
“ rosea
“ retrorsa
“ scabrata
“ schweinitzii
“ scoparia
“ scirpoidea
“ trisperma
“ trichocarpa
“ tribuloides
“ stricta
“ umbellata
“ pseudo-cyperus
“ varia
“ vulpinoides
Carpinus caroliniana
Caltha palustris
Cardamine bulbosa
“ pennsylvanica
Caulophyllum thalictroides
Clintonia borealis
Cornus alternifolia
“ canadensis
“ stolonifera
Coptis trifolia
Cypripedium parviflorum
“ pubescens
“ reginae
Collinsia verna
Dryopteris cristata
Dentaria diphylla
Eriophorum alpinum
Fragaria virginica
Geum rivale
Floerkea proserpinacea
Galium trifidum
Hamamelis virginiana
Hepatica acutiloba
Hydrophyllum virginicum
Isotria verticillata
Ilex verticillata
Juglans cinerea
Kalmia polifolia
Lithospermum arvense
Linnaea americana
Lonicera dioica
“ oblongifolia
Lemna trisulca
Juncoides campestris
Medeola virginica
Mitella diphylla
“ nuda
Memyanthes trifoliata
Minulus ringens
Galeorchis spectabilis
Panax trifolia
Osmunda cinnamonea
“ claytoniana
Prunus virginiana
“ serotina
Pyrola secunda
“ uliginosa
Prunus pennsylvanica
Ranunculus pennsylvanicus
Phlox divaricata
Platanus occidentalis
Ribes americanum
Streptopus roseus
Samolus floribundus
Senecio aureus
Scutellaria galericulata
Sambucus pubens
Trientalis borealis
Trillium erectum
“ grandiflorum
“ undulatum
Tsuga canadensis
Tiarella cordifolia
Unifolium canadense
Vagnera racemosa
“ stellata
Veronica officinalis
“ scutellaria
Viburnum alnifolium
Valerinella radiata
Uvularia grandiflora
Viola canadensis
“ pubescens
“ cucullata
“ conspersa
Vagnera trifolia
Washingtonia claytoni

The most interesting species represented in this package are the following:

Carex platyphylla Carey, near Utica, June 1832 (as Carex anceps).

Carex oligocarpa Schk., Frankfort, Herkimer county, June 1832.

Carex careyana Torrey, near Utica, June 1832 (as Carex plantaginea).

Carex swanii (Fernald) Mackenzie, Oriskany, Oneida county, June 29, 1832 (as Carex hirsuta).

Carex livida (Wahl.) Willd., Oriskany swamp, June 29, 1832.

Carex deweyana Schw., near Utica, June 1832.

Collinsia verna Nutt., Utica, May 1832. This from Oneida county is new to the state herbarium although we have specimens of it from outside the State. Paine states that it occurs on wet meadows on the flats of the Mohawk, just below Utica and on the borders of a small pond near Utica (Kneiskern). He also cites Gray's collection and one from Ithaca (Aiken). The latter specimen is in the Beck herbarium in the State Museum. J. V. Haberer,[1] who has contributed much of value to our knowledge of the flora of central New York, does not mention this species in his notes on the Plants of Oneida County and Vicinity and I assume that he has not rediscovered this plant, which seems to have been known only to Kneiskern and Gray.

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[1] Rhodora, 7: 92–97; 106–10. 1905.

NOTES ON LOCAL FLORAS V

Anchistea virginica (Linnaeus) Presl.

(Woodwardia virginica *Smith*)

A common fern in the coastal region but considered rare or local in other parts of the State. It is known, however, from numerous localities in the central part of the State and its extreme northern range is apparently indicated by a collection from a dry sphagnum bog near the Grass river at Canton, St Lawrence county (Mrs Orra Parker Phelps, August 24, 1916) and Beaver lake, Lewis county (B. D. Gilbert).[1] In Oneida county it has been collected in the swamps of Rome by Paine[2] (p. 176) and at Sylvan Beach by H. D. House.[3] Paine also reports it from Wetmore's pond on Frankfort Hill, Herkimer county, and from Junius, Seneca county, where it has also been collected by Peck. In Oswego county it occurs in a bog 3 miles east of Phoenix (H. D. House, August 13, 1915), and at Kasoag (Peck). In Onondaga county it is found in Cicero swamp (H. D. House, August 15, 1916). Westward it is not so frequent, but occurs in the bogs at Mendon, Monroe county (H. D. House, July 5, 1917) and at Adams Basin (Baxter[4] p. 131). It is also reported from Counterfeiter's ledge, Akron, Erie county, and Cassadaga, Chautauqua county, by Day[5]. In the southern tier of counties it is reported from 10 miles north of Binghamton by Clute[6] and from Machias, Cattaraugus county, by Fenno[7].

Polystichum braunii (Spenner) Fee

This rare fern, well known in the Catskill region, was first found in the Adirondacks by Professor Peck[8] in 1871, on the base of Bartlett mountain near Lower Ausable lake, Essex county, where it has again been recently collected (E. P. Killip, July 24, 1917). Lower Ausable lake is not in North Elba and hence this fern does not appear in Peck's list of North Elba plants, but it has more recently been reported from North Elba by Edgar Tweedy[9]. In Warren county it has been found by Mrs E. Watrous near Hague (July 15, 1907). These constitute the known Adirondack localities.

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[1] Torrey Bot. Club Bul. 6, p. 363. 1879.

[2] J. A. Paine jr. Catalogue of the Plants of Oneida County and Vicinity, 18th Ann. Rep't Regents, 1865.

[3] Torreya, 3: 166. 1903.

[4] Beckwith, Macauley & Fuller. Plants of Monroe County and Vicinity. 1896. First Supplementary List by Beckwith, Macauley & Baxter. 1910.

[5] D. F. Day. Catalogue of the Native and Naturalized Plants of the City of Buffalo and Vicinity (Buffalo Soc. Nat. Sciences Bul. 4, 1882). Reprinted and repaged. 1883.

[6] Torrey Bot. Club Bul. 23, p. 424. 1896.

[7] N. Y. State Mus. Bul. 67, p. 51. 1903.

[8] 24th Rep't N. Y. State Mus., p. 101. 1872.

Lycopodium clavatum var. brevispicatum Peck

Summit of Black Bear mountain, near Inlet, Hamilton county (H. D. House, June 26, 1917). The type of this interesting variety of club moss was collected by Peck[10] on Wallface mountain, July 17, 1900. It has also been reported from White Lake, Oneida county, by Haberer[11].

Selaginella rupestris (Linnaeus) Spring

On rocky ledges, Glenmont, Albany county (H. D. House, September 12, 1917). The various collections and published reports of this small fern ally indicate that it is rather local. Paine[2] (p. 181) reports it only from Little Falls and Alexandria Bay. Day[5] (p. 92) reports it from the cliffs of the Niagara river and in the Plants of Monroe County[4] (p. 134) it is recorded by M. S. Baxter from dry sandy barrens at Penfield, a rather unusual habitat for the species but which has also been noticed by Burnham and Latham[12] at Orient Point on Long Island. It has also been collected at Troy by E. C. Howe and at Little Falls by Haberer.

Ammophila arenaria (Linnaeus) Link

Common on the sandy fields and banks bordering Lake Ontario near Round pond, Monroe county (H. D. House, July 3, 1917). Paine[2] (p. 167), reports this grass from here stating that it is "abundant . . . over the long bars against Round pond, Long pond, Cranberry pond and Braddock's bay, covering the ridges of clear sand," etc.

Panicularia grandis (S. Watson) Nash

Penfield, Monroe county (M. S. Baxter, August 13, 1916). Marsh near Pittsford, Monroe county (H. D. House, July 5, 1917). Apparently an uncommon species of grass but widely distributed in this State, having been collected at Apullia, Onondaga county (H. D. House, August 13, 1916), Lake Placid, Essex county (H. D.

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[9] N. Y. State Mus. Bul. 167, p. 36. 1913.
[10] 54th Rep't N Y. State Mus., p. 162. 1901.
[11] Rhodora, 7: 96. 1905.
[12] Torreya, 14: 230. 1914.

House, September 7, 1917), and near Gloversville, Fulton county (A. Olsson June 29, 1912).

Eleocharis intermedia habereri Fernald[13]

Muddy banks of the Hudson river at Glenmont, Albany county (H. D. House, September 12, 1917). The type of this variety was collected on the shores of Oneida lake by J. V. Haberer (no. 1149a, Vienna, Oneida county, August 2 and 18, 1900). Haberer's specimen numbered 1149a in the state herbarium is from Lewis Point, Madison county.[14] The writer has observed, however, that this variety is frequent on the shores of all four counties which border on Oneida lake.

Carex aquatilis Wahlenberg

Marsh on the edge of Round pond, Monroe county (H. D. House, July 3, 1917).

Carex buxbaumii Wahlenberg

On an open marsh near Mendon, Monroe county (H. D. House, July 2, 1917), growing with Carex stricta Lam., Carex lasiocarpa Ehrh., Carex leptalea Wahl., Carex diandra Schrank and Juncus balticus Willd.

Carex livida (Wahlenberg) Willdenow

Mendon marsh, Mendon, Monroe county (E. P. Killip, July 10, 1917). Paine[2] (p. 159) reports this rare sedge from the East dry-lots swamp near Jerusalem hill, Litchfield, southern Herkimer county, and also says that it formerly occurred in Oriskany swamp, Oneida county. There is a specimen collected in Oriskany swamp by Asa Gray in June 1832, in the state herbarium. Peck[15] and also Haberer have recollected this species in the state marsh near Litchfield. Sartwell's Carices Americae Septentrionalis contains Carex livida (no. 66) from Oneida (Vasey), Kneiskern also seems to have collected it at Oneida (state herbarium), both probably from Oriskany swamp.

Carex albursina Sheldon

Palmer's glen, Rochester, Monroe county (H. D. House, July 5, 1917). Peck[16] has reported this sedge under the name of Carex laxiflora Lam. var. latifolia Boott, from the Helderberg mountains and Sanford's Corners, Jefferson county.

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[13] Rhodora, 8: 130. 1906.
[14] N. Y. State Mus. Bul. 116, p. 35. 1907.
[15] 50th Rep't N. Y. State Mus., p. 127. 1897.
[16] 47th Rep't N. Y. State Mus., p. 17. 1894.

Carex shriveri Britton

Moist meadows near Albany (H. D. House, July 30, 1917). Also reported by Peck[17] under the older name of Carex haleana Olney (not Dewey), from Meadowdale, Albany county.

Carex tuckermani Dewey

Edge of marsh near Old Forge, Herkimer county (H. D. House, June 28, 1917).

Xyris montana H. Ries[18]

Paine in his catalog of Oneida county plants[2] (p. 146) first reported this characteristic Adirondack species under the name of Xyris bulbosa Kunth, from "muddy edges of an elevated pond at the east end of Bald rock, northern Herkimer county." This locality was rediscovered by E. P. Killip in 1916. In Gray's Manual (ed. 5, p. 548; 1868), the plant is designated as Xyris flexuosa var. pusilla Gray. It was reported[19] in 1873 from "borders of a pond in southern Hamilton county," and Dr C. H. Peck[20] reported it from the "cranberry marsh," Sandlake, Rensselaer county.

Around the edges of ponds and lakes in northern Oneida county the species is rather frequent. Dr J. V. Haberer[21] reports it from White lake, Round lake, Deer pond and Beaver meadows near North Wilmurt (Herkimer county). He also describes a form bracteosa.

Recent collections in the state herbarium are from Saranac Lake (Peck), Bellow's lake, Fulton county (C. P. Alexander) and Long Lake, Oneida county (H. D. House and E. P. Killip, August 9, 1917).

Heteranthera dubia (Jacquin) MacMillan

Shore of Oneida lake near the mouth of Oneida creek (H. D. House, August 19, 1917). Also collected here in 1902. Paine[2] (p. 146) reports this species from near Utica, Unadilla river (Gray), Eaton, Madison county (Bradley), Junius, Seneca county (Sartwell), Genesee river and Irondequoit bay (C. M. Booth).

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[17] 45th Rep't N. Y. State Mus., p. 30. 1893.

[18] Torrey Bot. Club Bul. 19, p. 38. 1892.

[19] Torrey Bot. Club Bul. 4, p. 25. 1873.

[20] 22d Rep't N. Y. State Mus., p. 103. 1869. N. Y. State Mus. Bul. 94, p. 35. 1905.

[21] Rhodora, 7: 94. 1905. N. Y. State Mus. Bul. 105, p. 36. 1906.

Juncus dudleyi Wiegand

Bergen swamp, Genesee county (H. D. House, July 4, 1917). Castle swamp, Oneida, Madison county (H. D. House, June 30, 1917). Sandy fields, Sylvan Beach, Oneida county (H. D. House, August 17, 1917). Near Gloversville, Fulton county (A. Olsson, June 29, 1912).

These localities are additions to the known range of this species in New York State, cited by Wiegand[22]. Peck[23] also reports it from Marl creek near Cortland and in the state herbarium is a specimen collected by Peck at Amagansett, Long Island. The species is usually found in marl bogs, but the Sylvan Beach and Amagansett specimens were growing in pure sand.

Juncus filiformis Linnaeus

Avalanche pass, Adirondack mountains (Douglas M. White, July 27, 1917). Peck has collected this rare species in the Adirondack region at Morehouseville, Rainbow lake and on Mount Marcy. Paine[2] (p. 144) reports it from the head of Oneida lake upon the authority of Gray and near Sackett Harbor, also upon Gray's authority.

Juncus torreyi Coville[24]

(J. nodosus var. megacephalus *Torrey*)

Olcott Beach, Niagara county (H. D. House, August 13, 1917). Johnstown, Fulton county (A. Olsson, September 13, 1913). Charlotte, Monroe county (L. Holzer, July 1864, who makes this interesting note upon the label " I should make this a distinct species from nodosus "). Holzer's collection is cited by Paine[2] (p. 145) and Torrey[25] (p. 326) describes it as a variety from specimens collected by Asa Gray on the shores of Lake Ontario.

Streptopus amplexicaulis (Linnaeus) DeCandolle

Swamps near Jordanville, Herkimer county (H. D. House, June 24, 1917). A rather frequent species throughout the Adirondack region having been collected by Peck at Loon Lake, Franklin county, and at Chapel pond and head of Cascade lake, Essex county. Peck also collected it at Jordanville and Paine[2] (p. 143) reports it as occurring in most of the swamps of the high hills of southern Herkimer county.

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[22] Torrey Bot. Club Bul. 27, p. 524. 1900.

[23] 54th Rep't N. Y. State Mus., p. 143. 1901.

[24] Torrey Bot. Club Bul. 22, p. 303. 1895.

[25] John Torrey, Flora of New York, 2 v. 1843.

Criosanthes arietina (R. Brown) House

(Cypripedium arietinum *R. Brown*)

With one exception, the records of this rare orchis are limited to localities in central New York. That exception is a collection made near Hague, Warren county, by Mrs E. Watrous[26]. Paine[2] p. 190) reports it from Summit lake, Otsego county, Jordanville (southern Herkimer county) and near Oneida lake (Gray). He also states that it was formerly found near the Plattekill, Schenectady county. Mrs M. O. Rust[27] records it from Cicero swamp, Onondaga county, and H. D. House[28] cites specimens collected near Syracuse (Beauchamp), Cicero swamp (House), and Mud lake near Jordanville (Haberer).

It was recently seen and collected in a swamp just south of Jordanville (H. D. House and E. P. Killip, June 24, 1917). Many years ago B. D. Gilbert[29] found in the swamp at Summit lake, Otsego county, a pure white-flowered form which may be designated as *Criosanthes arietina* forma *albiflora*.

Perularia flava (Linnaeus) Rydberg

Moist meadows near Long pond, Monroe county (H. D. House, July 3, 1917), growing in company with the common green orchis (Limnorchis hyperborea), which it greatly resembles.

Lysiella obtusata (Pursh) Rydberg

Moist woods near Cohasset on Fourth lake, northern Herkimer county (H. D. House, June 27, 1917). This is not far from the only locality reported by Paine[2] (p. 135) "mossy springy banks between Third lake and Bald rock." Peck has collected this rare orchis on Whiteface mountain and near North Elba.

Blephariglottis grandiflora (Bigelow) Rydberg

Grassy swamp east of the Wood farm, North Elba (E. P. Killip, July 29, 1917). Perhaps the same locality as reported by Peck[30].

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[26] N. Y. State Mus. Bul. 122, p. 132. 1908.
[27] Torrey Bot. Club Bul. 10, p. 67. 1883.
[28] Torrey Bot. Club Bul. 32, p. 374. 1905.
[29] 22d Rep't N. Y. State Mus., p. 103. 1869.
[30] N. Y. State Mus. Bul. 167, p. 35. 1913.

This beautiful fringed orchis is not rare in the Adirondack region although published reports of its distribution are few. It occurs in an old beaver meadow near Fourth lake, Herkimer county (House and Killip, 1917) and Dr J. V. Haberer[11] (p. 95) reports it from White lake outlet and from the headwaters of Black river near North lake.

Arethusa bulbosa Linnaeus

Apparently as abundant throughout the northern, central and western portions of the State as it is upon the sandy coastal plain, although more locally distributed. Paine[2] (p. 137) reports it from Schenectady (Pearson), near Utica and in the Oriskany swamp (Gray), beyond Fort Bull, Junius, Seneca county (Sartwell) and in Bergen swamp. In Bergen swamp, Genesee county, it is very abundant. It was collected there by H. D. House and E. P. Killip and also at Lily marsh, South New Haven, Oswego county, Mud lake near Hannibal, Oswego county, and at Mud pond, near Zurich, Wayne county. It was also collected at Lily marsh by C. S. Sheldon (July 5, 1877, state herbarium). The Lodi swamp locality at Syracuse reported by J. H. Wibbe[31], and by H. D. House[32], no longer exists.

Ophrys australis (Lindley) House

(Figure 1)

Sphagnum bog surrounding Mud pond, near Zurich, Wayne county (H. D. House and E. P. Killip, July 2, 1917). The distribution of this rare orchis in New York has been previously referred to by the writer.[33] Recent collections, however, of this and other species of the same genus seem to indicate the rather interesting fact that they are all known chiefly from regions outside the Adirondack and Catskill mountains. In fact I can find no records of any species of Ophrys (Listera) in the Catskill mountains; and of the many records for Ophrys cordata, only two are in Essex county, while the third species, Ophrys convalarioides, has been found only at Turin, Lewis county[34] and at Newport, Herkimer county[28] (p. 380), neither locality within the Adirondack mountains, although Mrs A. M. Smith[35] reports it from the Adirondack League Club tract.

The first record of Ophrys australis in New York was made by the late Rev. Hermann Wibbe[36] who found it in the "Lily marsh" at South New Haven, Oswego county, on June 15, 1878. It has since been collected there by Charles S. Sheldon (June 27, 1879, state herbarium) and by H. D. House and E. P. Killip (July 1, 1917). H. D. House[28] (p. 380) cites collections from near Baldwinsville, Onondaga county (Beauchamp, Underwood, O. E. Pearce and others). It was collected at Fine, St Lawrence county, by Peck and at Canada lake, Fulton county, by C. P. Alexander and A. Olsson[33]. In 1894, W. W. Rowlee[37] collected it at East Palermo, Oswego county.

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[31] Torrey Bot. Club Bul. 10, p. 46. 1883.

[32] Torreya, 3: 52. 1903.

[33] N. Y. State Mus. Bul. 176, p. 26. 1915.

[34] 38th Ann. Rep't N. Y. State Mus., p. 83. 1885.

[35] Annie Morrill Smith. List of Plants Found on the Adirondack League Club Tract, p. 52.

In 1916 it was collected in a bog east of Duck lake, Conquest, Cayuga county, by L. Griscom[38], A. A. and A. H. Wright, F. P. Metcalf, K. M. Wiegand and L. H. MacDaniels, and near Victory, Cayuga county, by L. Griscom, A. A. and A. H. Wright, F. P. Metcalf and K. M. Wiegand.

Ophrys cordata Linnaeus

(Figure 1)

The accompanying map which shows the distribution of the three species of Ophrys in New York indicates this as the most abundant and widely distributed species in this State. There are few local floras which do not record it, among them being Dudley's Cayuga Flora.

Paine[2] (p. 137) reports it from southern Herkimer county, flats of the Mohawk valley, swamps west of Rome, Paris hill and southern Oneida county (Gray). F. V. Coville[39] reports it from Smithville, Chenango county, and this with a record from Unadilla Forks are cited by Clute[40] (p. 104). Day[5] (p. 76), records it from three localities in the western counties, and in the Plants of Monroe County and Vicinity[4] it is reported only from Bergen swamp, Genesee county, where it was again collected by W. W. Rowlee[37] and also by H. D. House, M. S. Baxter and E. P. Killip (July 4, 1917).

Mrs Goodrich[41] reports it from near Clay, Onondaga county (p. 72) and Gordinier and Howe[42] record it from Rensselaer county.

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[36] Torrey Bot. Club Bul. 6, p. 192. 1877 and 31st Ann. Rep't N. Y. State Mus., p. 31. 1879.

[37] W. W. Rowlee. Revision of the Genus Listera. Torrey Bot. Club Bul. 26, p. 165. 1899.

[38] F. P. Metcalf & L. Griscom. Rare New York State Plants. Rhodora, 19: 52. 1917.

[39] Torrey Bot. Club Bul. 12, p. 53. 1885.

[40] W. N. Clute. Flora of the Upper Susquehanna. 1898.

[41] Mrs L. H. H. Goodrich. Plants of Onondaga County. 1912.

[42] Gordinier & Howe. Flora of Rensselaer County. 1894.

H. D. House[28] (p. 378) cites other localities in central New York including Syracuse (Underwood), Baldwinsville (Beauchamp) and Fenner, Madison county (Underwood).

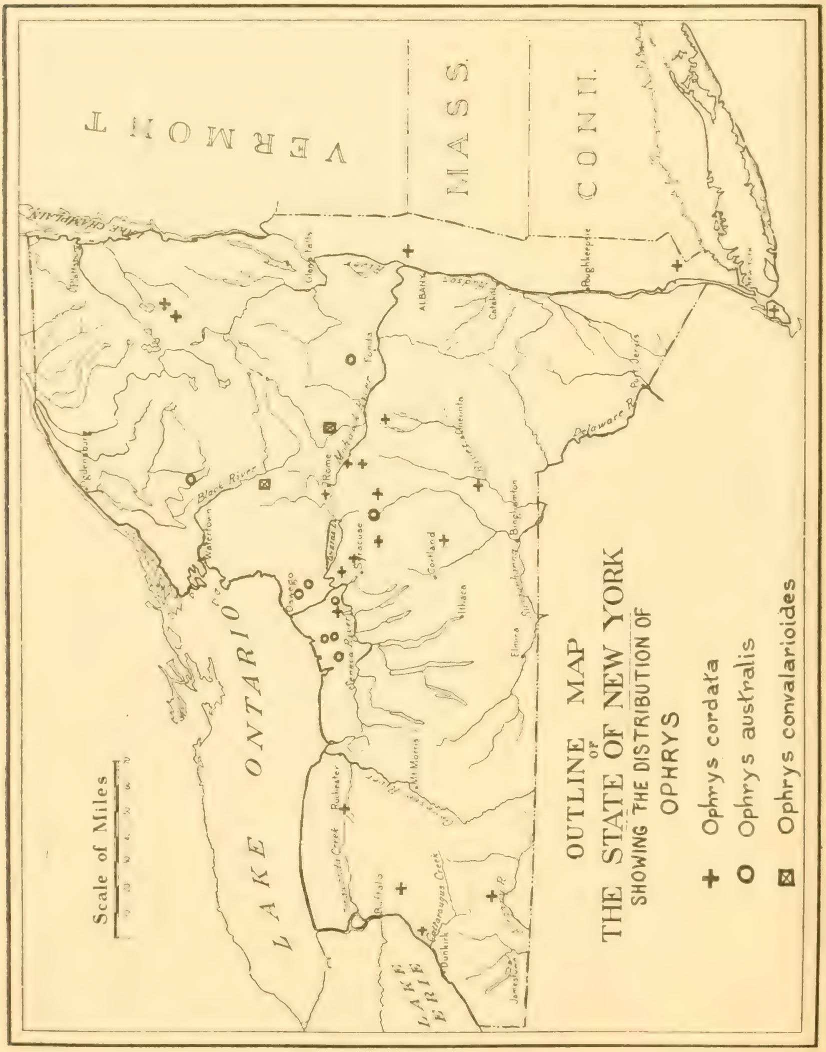

Fig. 1 Distribution of the genus Ophrys in New York

In southern New York the species is rare. Hollick and Britton[43] report it from Staten Island on the basis of an old specimen in the Elliot collection, and the record of "Listera convallarioides Hook." in O. R. Willis's[44] Flora of Westchester County (p. 815), in all probability refers to this species.

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[43] Hollick & Britton. Flora of Richmond County. 1879.

Corallorrhiza corallorrhiza (Linnaeus) Karsten

(C. trifida *Chatelain*)

Cedar swamp near Jordanville (H. D. House and E. P. Killip June 24, 1917). It has also been collected here by Peck (state herbarium) and Paine[2] (p. 138) records it from Trenton Falls, cedar swamps of the Mohawk flats near Utica, Paris hill, Hidden lake, Jordanville and Mud lake (the last three in Herkimer county). House[45] reports it from Baldwinsville (Beauchamp) and from Syracuse, Onondaga county (Underwood). In northern New York, Peck has collected this small orchis at Lake Placid and North Elba[46], Elizabethtown[47], Fine, St Lawrence county, and Sageville.

Myrica carolinensis Miller

This dwarf species of wax myrtle is very abundant on the sandy coastal plain of Long and Staten Islands and has been reported up the Hudson valley as far as Cold Spring, Putnam county, by Peck[48]. Its occurrence in several marl bogs throughout western New York has long been known and, along with several other coastal plain species found on the Ontario lowlands, indicates a relationship between the vegetation of the two regions.

Early reports all refer to this species as Myrica cerifera. Paine[2] (p. 127) reports it from Junius (Sartwell), Seneca county, Rochester (Chester Dewey), Parma (Bradley) and the swamps of West Bergen. G. W. Clinton[49] reports it from Caledonia. Numerous collections have been made at the Bergen swamp locality by M. S. Baxter, C. H. Peck, E. P. Killip, H. D. House (July 4, 1917) (June 2, 1916) and others. At Junius it has also been collected by Peck and by H. D. House (August 10, 1917).

Persicaria careyi (Olney) Greene

Marsh near Albany (H. D. House, July 30, 1917). Peck[50] records this species from Minnewaska and the state herbarium also contains specimens collected at Tappan (C. F. Austin), Fulton county (C. P. Alexander) and Wading river (Young)[51]. Paine[2] (p. 121) reports it from Summit lake, Otsego county, and Mud lake, southern Herkimer county.

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[44] O. R. Willis. Flora of Westchester County (Bolton's History of Westchester County, p. 771–826). 1881. Reprinted and repaged.
[45] Torreya, 3: 54. 1903.
[46] N. Y. State Mus. Bul. 157, p. 38. 1912.
[47] N. Y. State Mus. Bul. 28, p. 130. 1899.
[48] 25th Rep't N. Y. State Mus., p. 107. 1873.
[49] 19th Ann. Rep't Regents, p. 79. 1866.
[50] 53d Rep't N. Y. State Mus., p. 852. 1900.

Ranunculus delphinifolius Torrey[52]

Golah, Monroe county (E. P. Killip, June 15, 1917). This is apparently the variety α of R. purshii in Paine's catalogue[2] (p. 54), where the species is reported from marshes east of Onondaga lake, and along the shore of Lake Ontario at Sodus bay (p. 182). Beck and Tracy[53] (as R. lacustris) report it from "near Lansingburg and near Lewiston," while the Beck herbarium contains a specimen from near Albany and one from Rochester (Bradley).

In the Monroe county flora[4] (p. 42) it is reported from West Henrietta, Chili, Gates and Wayne county. Gray[54] reports it from near Watertown, and it has been collected at Ithaca (C. S. Sheldon, 1880), Albany (Peck) and Rossie, St Lawrence county (Peck, June 14, 1909). In southern New York it is reported from Wading River by E. S. Miller[55] and from Orient by Burnham and Latham[56], from Staten Island by Hollick and Britton[57].

The true Ranunculus purshii Richards. (Frank. Jour., p. 741; 1823) is referred to by Paine (p. 54) as variety β while his variety γ is quite certainly the so-called variety terrestris of Ranunculus delphinifolius.

Aquilegia vulgaris Linnaeus

The European columbine is an occasional escape near dwellings but in southern Herkimer county it has become in certain localities a very common weed, especially in old fields and in pastures. When in full bloom (June 24, 1917) it is very conspicuous.

Asimina triloba (Linnaeus) Dunal

The papaw, which is rather abundant throughout the southern states, is known in New York State from only a few localities in the western counties. Recently collected in an old field near the New York Central Railroad about 2 miles east of Brockport, Monroe county (H. D. House, August 15, 1917).

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[51] 27th Rep't N. Y. State Mus., p. 112. 1877.
[52] Eaton. Manual, ed. 2, p. 395. 1818.
[53] Beck & Tracy in N. Y. Med. & Phys. Jour., 2: 112. 1823.
[54] Ann. Lyc. Nat. Hist. N. Y., 3: 221. 1836.
[55] Torrey Bot. Club Bul. 6, p. 258. 1878.
[56] Torreya, 14: 241. 1914.
[57] Torrey Bot. Club Bul. 18, p. 213. 1891.

Paine[2] (p. 57) cites Greece and Parma, Monroe county (Bradley), shore of Lake Erie near Barcelona (Kneiskern). In the Monroe county flora the Brockport locality is credited to Prof. W. H. Lennon and it is also reported from Adams Basin by Baxter. Day[5] (p. 15) reports it from Sturgeon Point, Erie county (C. H. Williams), Lockport and Middleport, Niagara county (James Hall), mouth of Chautauqua creek (Kneiskern) and Medina, Orleans county (Dr Hugo Schmidt).

It is interesting to note here that adult specimens of the butterfly (Iphiclides ajax telamonides), the larvae of which feeds upon the papaw, have been taken on the flowers of the fireweed (Chamaenerion angustifolium) in North Elba[58], Essex county, along the road to Keene, at an altitude of about 2000 feet, on July 17, 1912. The papaw is unknown in this region and so far as we know does not occur nearer than Monroe county or New Jersey, but it is possible that the larvae of ajax has other food plants than the papaw.

Radicula hispida (Desvaux) Britton

On the sand bar between Braddock's bay and Lake Ontario, Monroe county (H. D. House, July 3, 1917).

Polanisia graveolens Rafinesque

Along sand bars of the Hudson river near Wemple, Albany county (H. D. House, September 29, 1917). This has been previously reported from the banks of the Hudson below Garrisons by J. S. Merriam[59] and at Peekskill[60] by S. B. Mead. Paine (p. 62) reports it from Schenectady (Pearson), Oneida lake (Vasey), Cayuga Bridge (Bradley), Crooked lake (Sartwell). It is also recorded from near West Point by W. W. Bailey[61] and George W. Clinton[62] mentions collections of it from Kings county made by Smith and Leggett. The state herbarium also contains specimens of this rather local species from Seneca lake (Gray), Owasco lake

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[58] F. E. Watson & L. V. Coleman in Brooklyn Entomological Soc. Bul. 8, p. 4–6. Oct. 1912.

[59] Torrey Bot. Club Bul. 3, p. 38. 1872.

[60] Torrey Bot. Club Bul. 3, p. 40. 1872.

[61] Torrey Bot. Club Bul. 13, p. 60. 1886.

[62] 19th Rep't Regents, p. 204. 1866.

(Sheldon, 1879) and Barcelona, on shore of Lake Erie (J. R. Churchill, August 11, 1896).

Potentilla paradoxa Nuttall

Very abundant on the sand bar at the outlet of Braddock's bay, Monroe county (H. D. House and E. P. Killip, July 3, 1917). This locality has long been known as one of the few stations in this State where this rare species of five-finger grows. It was first recorded from here by Paine (p. 186) and later by Dr N. L. Britton[63]. It has also been collected at Fair Haven, Cayuga county, by Charles S. Sheldon (July 30, 1880) and at Sodus Bay by E. L. Hankenson (state herbarium). J. F. Cowell[64] reported it from the cattle yards at East Buffalo in 1883, where it was evidently introduced from the west.

Potentilla intermedia Linnaeus

Shore of Lake Champlain, near Port Henry (E. P. Killip, August 8, 1917). A rare species, sparingly introduced from Europe and also collected several years ago at Flushing, Long Island by George A. Hulst[65].

Geum aurantiacum Fries[66]

(Geum rivale x strictum *Rydberg*)[67]

Stems 6 to 8 dm high from a perennial root, smooth below, finely pubescent in the inflorescence and on the upper part of the stem. Basal leaves 1 to 5 dm long, the smaller ones with somewhat rounded, blunt leaflets, 3 to 5 in number, cuneate at the base; petioles somewhat ciliate at the base; leaflets of the larger leaves lanceolate in the lower pair to oblanceolate or obovate and acute in the pairs below the orbicular or orbicular-obovate terminal leaflet, glabrous above and below, paler beneath; sepals purplish, broadly ovate-lanceolate, acuminate, 1 to 1.5 cm long, becoming reflexed; petals 1.5 to 2 cm long, clawed at the base, the apex emarginate, yellowish or purplish yellow.

Adirondack mountains (C. H. Peck, June). No information is given on the label by Doctor Peck as to the exact locality, but the plant was doubtless collected in the vicinity of North Elba.

Agrimonia bicknellii (Kearney) Rydberg[68]

Related to Agrimonia parviflora, from which it is marked chiefly by its tuberous thickened roots, fewer leaflets, velvety pubescence and absence of glandular-granulules on the leaves of the stem.

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[63] Torrey Bot. Club Bul. 21, p. 31. 1894.

[64] Buffalo Nat. Field Club Bul. 1, p. 86. 1883.

[65] A. J. Grout in Torreya, 2: 51. 1902.

[66] Scheutz, Nova Acta Soc. Upsal. III. 7, pt 6, p. 30. 1870.

[67] North American Flora 22: pt 5, p. 407. 1913.

[68] Torrey Bot. Club Bul. 38, p. 450. 1911. North American Flora 22, pt 5, p. 394. 1913.

Vaughns, Washington county (C. H. Peck, August 7). Tappantown, Rockland county (C. F. Austin).

Astragalus carolinianus Linnaeus

Sandy fields near Long pond, Monroe county (H. D. House, July 3, 1917). Not a rare plant in western New York although Paine[2] (p. 72) records it only from the east side of Onondaga lake and from Seneca lake. The Beck herbarium contains a specimen from Rochester and also one labeled "Albany, G. W. Clinton." The latter locality might be questioned were it not for the fact that the same species is reported from the banks of the Hudson by Wright and Hall[69]. It has not been collected in eastern New York within recent years and was not observed by Doctor Peck.

Lespedeza brittonii Bicknell

Edge of woods, Glenmont, Albany county (H. D. House, September 12, 1917). Stems widely spreading and somewhat ascending, resembling Meibomia michauxii in general habit. The type collected at Bronxville, New York City, seems to be the only other published record of the occurrence of this species in New York State (Torreya, 1: 103. 1901).

Polygala paucifolia forma alba (Eights)

P. paucifolia var. alba Eights; T. & G. Fl. N. A. 1: 132. 1838; Torr. Fl. N. Y. 1:152. 1843.

P. paucifolia var. albiflora Knight, Rhodora 8:66. 1906.

Stony woods near Glenmont, Albany county (H. D. House, June 2, 1917). The occurrence of this pure white-flowered form of the fringed milkwort in large patches suggests that the underground rhizomes afford the chief means of reproduction in this plant. Paine[2] (p. 71) reports this form from Schenectady (Pearson) and Otsego county (Mrs J. Shaw). It has also been found at Pond lake, Broome county by C. F. Millspaugh[70], and near Binghamton by H. L. Griffis (state herbarium).

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[69] Wright & Hall. Catalogue of the Plants of Troy and Vicinity, p. 8. 1836.

[70] Torrey Bot. Club Bul. 12, p. 101. 1885.

Viola triloba Schweinitz

This violet has been in the past so frequently confused with Viola palmata, that the older published records afford little data of value regarding its distribution. Recent collections and the material in the state herbarium indicate that it is common in most parts of the State except the Adirondack region and the northern counties. The following collections are represented in the state herbarium: Rensselaer county: Lansingburg (C. H. Peck, June 5, 1905), Bald mountain (H. D. House, August 25, 1916). Albany county: Wemple (H. D. House, June 9, 1917). Monroe county: Mendon (H. D. House, July 5, 1917). Nassau county: Port Washington (H. D. House, May 20, 1916).

Viola septentrionalis Greene

A frequent violet in most parts of the State except the coastal plain and especially abundant in woodlands of the Adirondack region. Peck[71] reports it from Warrensburg, Warren county, and Minerva, Essex county. He has also collected it at North Elba and other places in the northern part of the State (state herbarium).

Recent collections of this species from other parts of the State are: Albany county: Kenwood (Rubinger, May 1916). Herkimer county: Cedar Lake (H. D. House, June 23, 1917). Madison county: Onedia (H. D. House, May 15, 1915). Oneida county: Taberg (H. D. House, June 7, 1916). Genesee county: Bergen swamp (H. D. House, June 2, 1916).

Viola labradorica Schrank

A small subalpine and subarctic violet with leaves one-quarter to three-quarters of an inch wide, linear stipules which are entire or nearly so and small bright-blue flowers. A species formerly confused with the common american dog violet (Viola muhlenbergia Torr).

Mossy hummocks in a cold sphagnum bog near the head of Fourth lake, Hamilton county (H. D. House, June 26, 1917). Minerva, Essex county (C. H. Peck, in state herbiarium). I would also refer to this species with little hesitation specimens collected at Randolph, Cattaraugus county, by William B. Limberger, May 1909 and distributed under the name of Viola cardaminafolia Greene. They are presumably cotypes of Greene's species which was collected by Mr Limberger at Randolph.

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[71] N. Y. State Mus. Bul. 94, p. 35. 1905.

Viola adunca J. E. Smith

A rather local violet confined chiefly to sandy and stony sterile soil, or sometimes on ledges of shale rock. All our specimens are from the northern and western parts of the State. It has been referred to the European Viola arenaria DeCandolle, also reported as Viola canina var. puberla S. Watson, and Viola subvestita Greene.

Glenmont, Albany county (H. D. House, May 18, 1917). Luzerne, Warren county (H. D. House, July 20, 1917). Sylvan Beach, Oneida county (H. D. House[72] and also July 21, 1914). North Elba, Essex county (C. H. Peck). Warrensburg, Warren county (C. H. Peck). Gloversville, Fulton county (A. Olsson, June 15, 1912).

Frasera carolinensis Walter

(Figure 2)

Shaker woods near Sonyea, Livingston county (E. P. Killip, June 1, 1917). This is a rare and local species throughout the western counties of the State. Paine[2] (p. 116) reports it from the banks of the Genesee river (Hadley), East Bloomfield, Ontario county (Sartwell), Monroe county (L. Holzer and C. M. Booth) and south of Moscow, Livingston county (Bradley). There is a duplicate of the Bradley collection in the state herbarium. The reference in Torrey's Flora of New York[25] (2: 109) to the occurrence of this species along the West Canada creek in Herkimer county is quite obviously a mistake, as pointed out by Paine. George W. Clinton[49] (p. 78–79) cites observations by David Thomas and also by himself and D. F. Day which indicate that this species is a triennial plant.

Veronica teucrium Linnaeus

Well established along roadsides near Mexico, Oswego county (H. D. House and E. P. Killip, July 1, 1917). Not previously reported from New York.

Agalinis acuta Pennell[73]

Moist depressions of the Hempstead plains, Long Island (H. D. House, September 8, 1915). This is Agalinis parvifolia (Chapman) Small, in Britton & Brown's Illustrated Flora, 3: 212, 1913, as to the northern extension of range there credited to the species. It also occurs on Martha's Vineyard (M. L. Fernald, September 12, 1901. Plantae exsiccatae Grayanae, no. 45).

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[72] Torreya, 3: 166. 1903.

[73] Torrey Bot. Club Bul. 42, p. 338. 1915.

Agalinis maritima Rafinesque

A common species in the salt marshes of the Atlantic coast and rarely in bogs of the Ontario lowlands, in this respect exhibiting an extension of range comparable to that of Myrica carolinensis, Blephariglottis ciliaris and other plants. It has been collected at Mud lake near Hannibal, Oswego county (C. S. Sheldon, August 26, 1879, state herbarium) and at some locality along Lake Ontario near Rochester (Rev. L. Holzer, in state herbarium).

Utricularia intermedia Hayne

Mud lake near Hannibal, Oswego county (H. D. House, July 2, 1917). Pecksport, Madison county (H. D. House, June 9, 1916, subject of the color photograph in Wild Flowers of New York).

A rare species of bladderwort, but easily distinguished by the flattened character of its leaves. Paine[2] (p. 106) reports it from Hidden lake, southern Herkimer county, and Gray[54] reports it from near Watertown, collected by Crawe. B. D. Gilbert[74] records it from Beaver lake, Lewis county and the state herbarium contains specimens from Long Island (Miller), Sandlake, Rensselaer county (Peck) and " The Plains," Adirondack mountains (Peck).

Knautia arvensis (Linnaeus) T. Coulter

A native of Europe which has become sparingly naturalized in this state. Roadsides near Jordanville, southern Herkimer county (H. D. House, June 24, 1917). Roadsides near Richfield Springs (H. N. White, July 7, 1910, in state herbarium). It has also been reported from Staten Island by Hollick and Britton[75].

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[74] Torrey Bot. Club Bul. 6, p. 362. 1879.
[75] Torrey Bot. Club Bul. 13, p. 83. 1886.

TWO PLANTS NEW TO THE FLORA OF THE UNITED STATES

Among a number of flowering plants received from Dr W. Haydon of Oregon, were two species new to the flora of the United States, regarding which there should be made a definite record.

Geryonia Schrank, ex Hoppe in Flora 1: 229. 1818

Bergenia Moench, Meth. 664. 1794. Not Bergenia Neck. 1790.
Megasea Haw, Enum. Saxifr. 6. 1821.

Geryonia ciliata (Haw) comb. nov.

Saxifraga ligulata Wall. in As. Res., 8: 398. 1820. Not S. ligulata Murr. 1781.
Megasea ciliata Haw, Enum. Saxifr., 7. 1821.
Saxifraga ciliata Royle, Illustr. Bot. Himal., 226. pl. 49. fig. 2. Not Saxifraga ciliata Lindl. Bot. Reg. pl. 65. 1843, nor Walp. Rep. 2: 365.

A native of India of recent introduction on the Pacific coast. Found on dredgings at Ferndale, Coos bay, Oregon by Dr W. Haydon, no. 527. April 15, 1915. (Specimens deposited in Gray Herbarium).

Geranium pyrenaicum Burm. f.

Mussel reef, Cape Arago, Coos county, Oregon. Dr W. Haydon, no. 378. April 17, 1914. Native of Europe.

NEW OR INTERESTING SPECIES OF FUNGI V

Aleuria rhenana Fuckel

(Symb. Myc. 325. 1869)

An interesting cup fungus not previously reported from New York. On ground in coniferous woods, Pittsford, Monroe county. F. S. Boughton, September 30, 1912. Determined by Dr F. J. Seaver. Doctor Seaver describes and illustrates this species in Mycologia, 6: 275, pl. CXLII, November 1914, and it is also pictured by Cooke (Mycographia, pl. 112, fig. 400) under the name Peziza splendens Quel.

Armillaria ventricosa Peck

(Figure 3)

Originally described by Peck as Lentinus ventricosa, but later transferred by him and redescribed as a species of Armillaria from specimens received from Dr L. M. Underwood, collected in Alabama. It was collected in Nova Scotia in 1909 by A. H. Mackay, and recently at Asheville, North Carolina, by Prof. H. C. Beardslee, so that its known range now extends from Nova Scotia to Alabama, but has not been reported from New York. The type of Lentinus ventricosa was collected at Tacoma Park, D. C., by T. A. Williams, November 1896.

I am indebted to Prof. H. C. Beardslee for the excellent photograph of fresh specimens which is reproduced here in order to illustrate one of the rarest of American Agarics and one which should be looked for in New York.

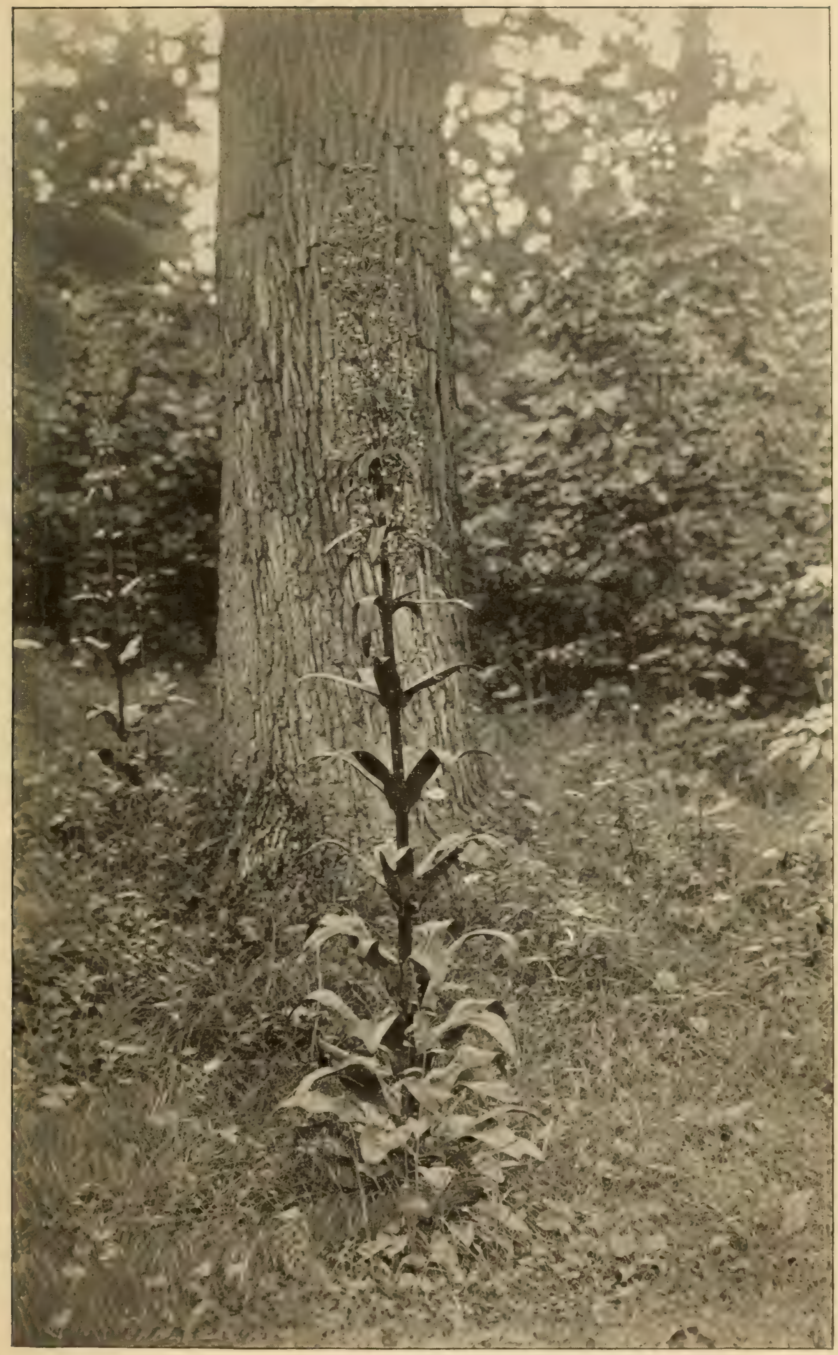
Bombardia bombarda (Batsch)

Sphaeria bombarda Batsch, Elench. Cont. I. fig. 181. 1786.
Bombardia fasciculata Fr. Summ. Veg. Scand. 389. 1849.
Bertia bombarda Ces. & DeNot. Schema Sf. It. in Comm. 1: 225.

On decorticated wood of Fagus, northern Herkimer county. H. D. House, July 1917. On decorticated wood of Fagus. Croghan and Worcester, C. H. Peck. On decayed wood, Portville and Helderberg mountains, C. H. Peck.

Catinula turgida Desm.

On dead limbs of Corylus rostrata. West Fort Ann, Washington county. S. H. Burnham, no. 119. June 4, 1916 (Det. Dearness).



(Photograph by G. A. Bailey)

Fig. 2 Frasera carolinensis Walter

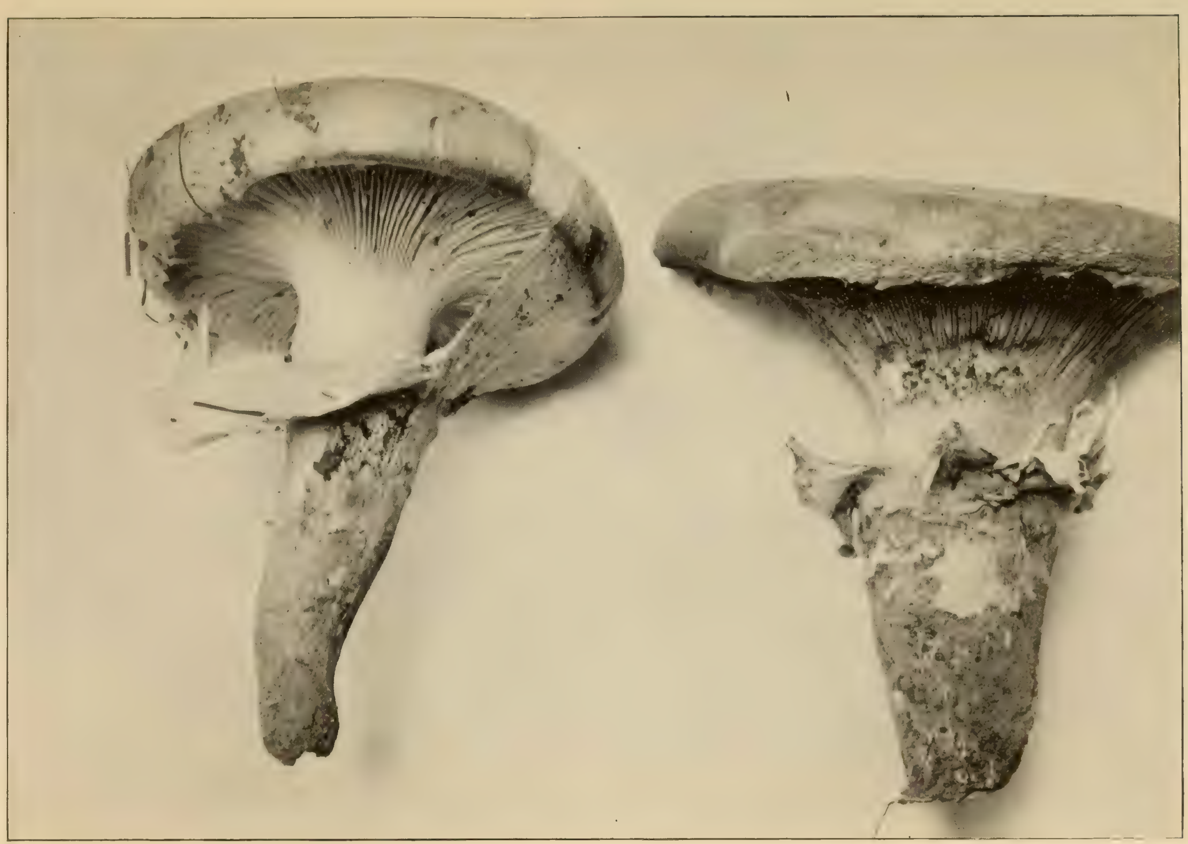


Fig. 3 Armillaria ventricosa Peck

Coniophora vaga Burt

On old log of Ulmus americana. Vaughns, Washington county. S. H. Burnham, no. 20. September 1, 1915.

Dicaeoma seymouriana Arthur

(Puccinia seymouriana *Arthur*)

Telia stage on leaves of Spartinia michauxiana Hitchc. South Bay, Madison county, on shore of Oneida lake. H. D. House. August 17, 1917. The sori appear upon the rough or under side of the leaves and between the veins, and hence is quite different from Puccinia fraxinata (Schw.) Arthur, which occurs upon the same host. The aecial stage of D. seymouriana occurs at the same locality upon leaves of Cephalanthus occidentalis L. and appears early in summer. Both of the host plants are very common and often grow together along the shores of Oneida lake and it is probable that the rust will be found at other places around the lake.

Didymaria didyma (Ung.)

Ramularia didyma Ung. Exanth. 169 pl. 2, fig. 10, 1833. Didymaria ungeri Corda, Anl. pl. B. fig. 9. 1842.

On leaves of Ranunculus septentrionalis. Redfield. Dr C. H. Peck, July 1890.

Eutypa eutypa (Achar.)

Lichen eutypus Achar. Lichen. Svecicae Prodr. 14. 1798. Sphaeria decomponens Sow. 1799. Sphaeria eutypa Fr. 1822. Valsa eutypa Nits. Eutypa acharii Tul.

On decorticated wood of Populus. Helderberg mountains. Dr C. H. Peck. On decorticated wood of Ostrya. Griffins, Dr C. H. Peck. On decorticated wood of Quercus rubra, South Ballston, Dr C. H. Peck.

Corticium alutaceum (Schrad.) Bres.

On fallen bark and wood, McKown's grove, Albany, N. Y. H. D. House and Joseph Rubinger, October 23, 1915.

Corticium arachnoideum Berk.

On fallen bark (Quercus) and leaves, Karner, Albany county. H. D. House, November 2, 1917.

Corticium atrovirens Berk.

On fallen trunk of Pinus rigida. Karner, Albany county. H. D. House, October 28, 1916 and October 8, 1914.

Corticium centrifugum Lev.

On fallen limbs of Acer rubrum. Karner. H. D. House, October 28, 1916.

Corticium confluens Fr.

On fallen limbs of Acer rubrum. Karner. H. D. House, October 26, 1916. On fallen limbs of Populus tremuloides, Karner, H. D. House, October 20, 1917.

Corticium epigaeum E. & E.

On decayed wood of Acer. Karner, Albany county. H. D. House, no. 14,160. October 3, 1914.

Corticium scutellare B. & C.

On dead bark of Carpinus, Meadowdale, Albany county. C. H. Peck, June 30, 1910. On Alnus, Karner, C. H. Peck (no. T.22). On Acer rubrum, Karner, C. H. Peck, October (no. T.7). On fallen limbs of Populus grandidentata, Karner. H. D. House, October 26, 1916.

Corticium stramineum Bres.

On fallen limbs of Acer rubrum. Karner, H. D. House, October 28, 1916.

Corticium vagum B. & C.

On hemlock log, Tsuga canadensis, North Elba, Essex county. C. H. Peck, July 28, 1905. On decayed log of Tsuga canadensis, McKown's grove, near Albany, H. D. House and Joseph Rubinger, October 23, 1915. On fallen trunk of Pinus strobus, Karner, Albany county. H. D. House, October 26, 1916. On decayed log of Betula, Karner, H. D. House, October 18 & 20, 1917.

Hypochnus rubiginosus Bresadola

(Zygodesmus rubiginosus *Peck*)

At the base of old stems of Solidago, in a moist field near Albany. H. D. House, December 3, 1916.

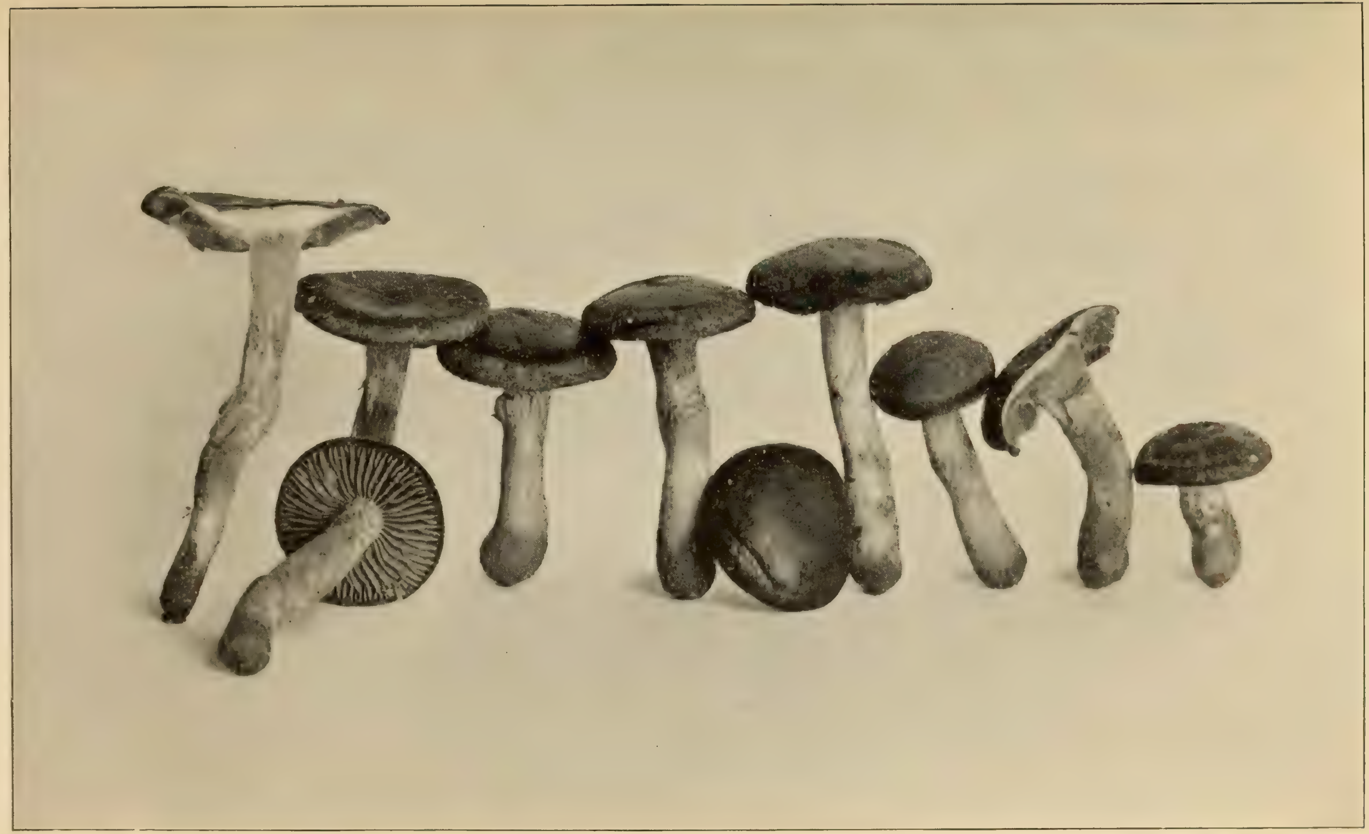


Fig. 4 Hebeloma colvini Peck

Gnomoniella gnomon (Tode)

Sphaeria gnomon Tode, Fungi Meckl., 2: 50, fig. 125. 1790.
Gnomonia vulgaris Ces. & DeNot. Schem. Sfer, 57.
Cryptosphaeria gnomon Grev.
Gnomoniella vulgaris Sacc. Syll. 1: 416. 1882.

On fallen leaves of Corylus and Ostrya, West Troy. C. H. Peck.

Gymnopilus carbonarius (Fr.) Murrill

(Flammula carbonaria *Quel.*)

Growing on charred pine stumps, McKown's grove near Albany. H. D. House, October 28, 1917.

Hebeloma colvini Peck

(Figure 4)

In barren sandy wastes near Karner, Albany county. H. D. House, October 8, 1917 and H. D. House and G. F. Atkinson, November 1, 1917.

Plants gregarious or scattered, pileus only above the surface of the sand, 2 to 7 cm high; pileus 2 to 5 cm broad; stems stout, 4 to 7 mm thick, even, rounded at the base, solid or stuffed to hollow above, pruinose at the apex. Pileus convex-expanded, viscid when moist, smooth, walnut-brown when moist, sometimes paler to alutaceous, sometimes with a distinct lighter zone on the margin, rarely the darker zone on the margin, odor and taste not distinctive; flesh whitish under the brown color which is next the cuticle, the thin margin incurved, slightly exceeding the lamellae; structure homogeneous, floccose, but cuticle more or less gelatinous and brown-colored beneath. Lamellae adnexed, sinuate, not crowded, subventricose, pallid to vinaceous-drab and tinged with ochraceous when covered with spores, edge whitish, cystidia none on the sides of the lamellae, edge of the lamellae with sterile, flexuose, cylindrical or subclavate cells 40 to 50 x 6 to 8 μ; basidia 4-spored; spores long ovate to subellipsoid, inequilateral, smooth, pale yellowish, in mass ochraceous-tawny, granular, 12 to 16 x 7 to 10 μ.

The species appears to have been named in honor of Mr Verplanck Colvin, at one time director of the Adirondack land survey. The spot where the above described specimens were collected is perhaps the type locality as no similar spot with such an abundance of the species was found elsewhere near Karner.

Hebeloma parvifructum Peck

(Figure 5)

In Pine woods, McKown's grove, near Albany. H. D. House and G. F. Atkinson, October 28, 1917.

Plants gregarious, 4 to 6 cm high; pileus 3 to 5 cm broad, viscid, convex-expanded, sometimes umbonate, at first white, then pale clay color to buff clay and darker or tawny on the umbo, or some plants tawny over the entire pileus (apparently such plants had been frozen or were very old); stems 4 to 6 mm thick, stout, even, white but tawny at the base, in age tawny to chestnut, solid or stuffed, fibrillose, pruinose at the apex, sometimes with a very delicate ring of threads near the top colored by the spores. Lamellae at first white, becoming buff to clay colored, adnate, emarginate, broad, cystidia numerous on the sides and edges of the gills, sublanceolate to subfusoid, the center gradually narrowing into the more slender terminal portion with a slender pedicel, 45 to 75 x 10 to 15 μ; basidia 4-spored; spores subelliptical to oboval and inequilateral in profile view, smooth, 5 to 7 x 3 to 4 μ.

Helicosporium mulleri (Corda) Sacc.

On dead bark of Populus grandidentata. Karner, Albany county. H. D. House, October 28, 1916. Also collected by Doctor Peck on dead bark at North Greenbush.

Hygrophorus hypothejus Fr.

(Figure 6)

Plants gregarious, 5 to 8 cm high; pileus 3 to 6 cm broad; stems 5 to 8 cm long and stout; pileus convex-expanded and in age depressed, viscid to glutinous when moist, dark umber to bister when young, paler to wood-brown in age or umber in the center and with a faint tinge of yellow or tawny toward the margin, not striate; lamellae somewhat decurrent, yellow or white becoming yellow; stem concolorous with pileus but paler, usually narrowed toward the base, universal veil slimy, extending from stem to margin of the pileus when young, apex of stem not viscid, nearly smooth, minutely floccose pruinose.

On sandy ground in edge of thicket of pine trees, Karner, Albany county. H. D. House and G. F. Atkinson, November 1, 1917.

Hymenochaete cinnamonea (Pers.) Burt

(H. spreta *Peck*)

On dead limbs of Alnus rugosa. Karner, Albany county. H. D. House, October 3, 1914 and November 2, 1916.

Hymenochaete corrugata (Fr.) Lev.

North of Rensselaer, on dead branches of Acer saccharum and Vitis aestivalis. H. D. House, April 27, 1916. A common species collected by Doctor Peck in the Catskill mountains, Altamont, Elm lake and North Elba.

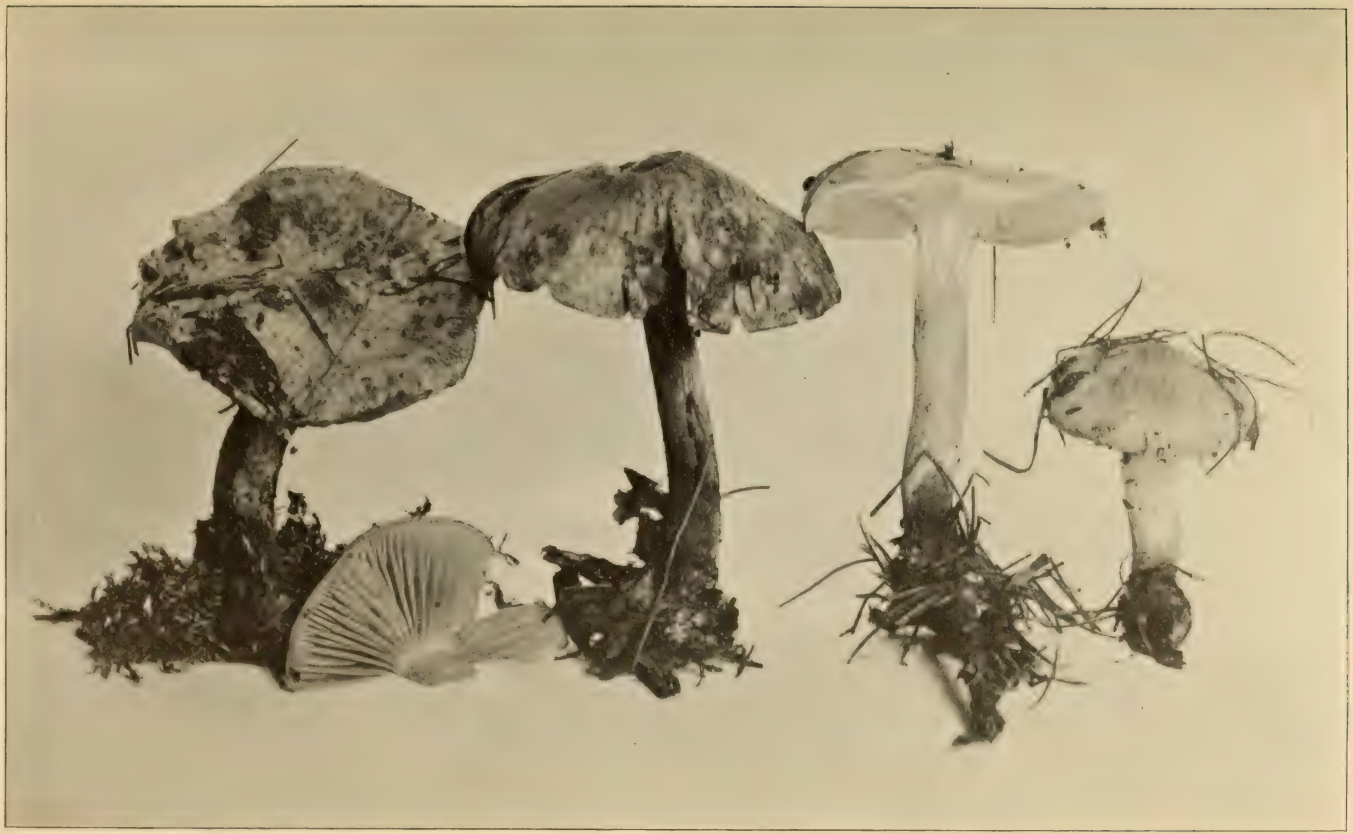


Fig. 5 Hebeloma parvifructum Peck

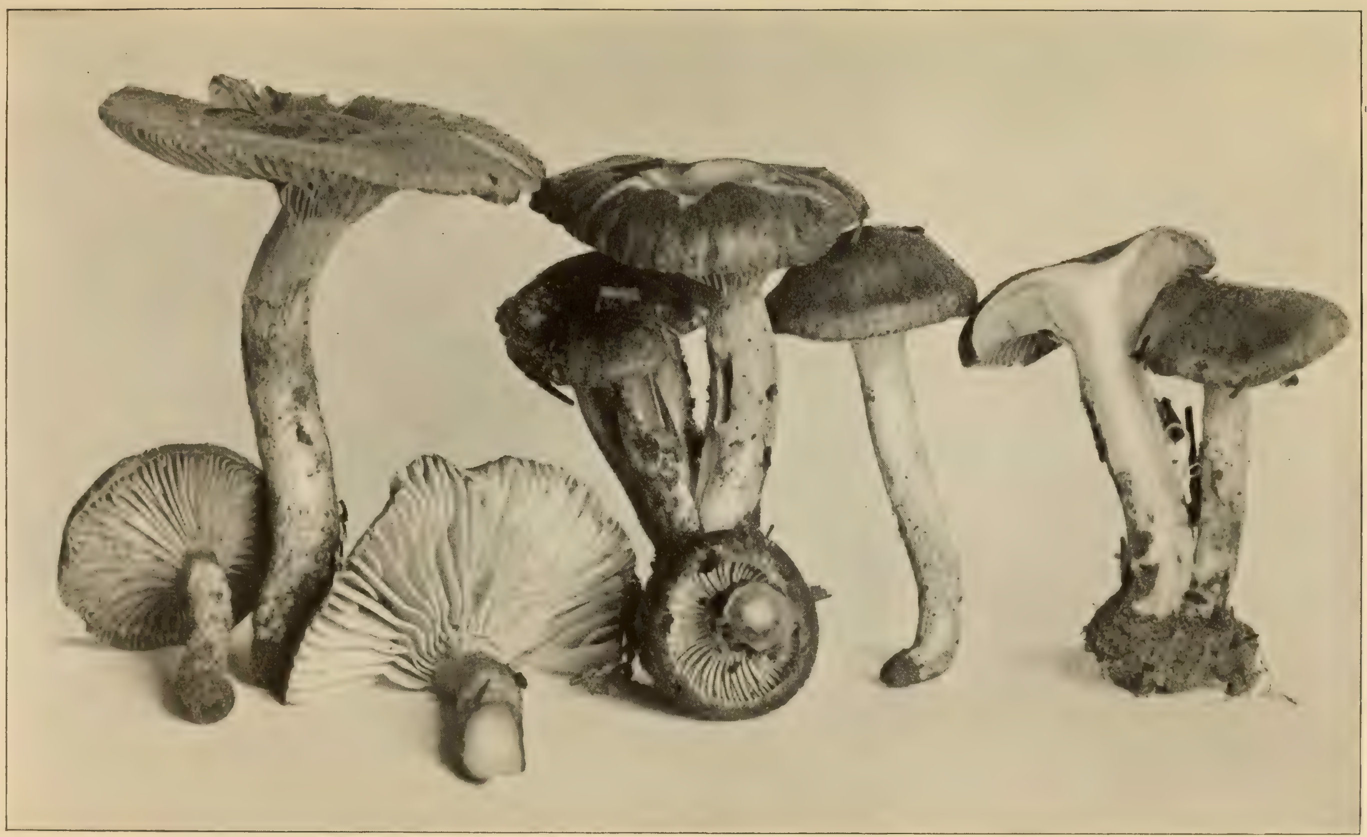


Fig. 6 Hygrophorus hypothejus Fries

Hymenochaete rubiginosa (Schrad.) Lev.

On fallen rails and limbs of Castanea dentata. H. D. House, November 2, 1916. Also collected at Orient Point, Long Island, by Roy Latham in 1911 and at Port Jefferson, Long Island by Doctor Peck, several years ago.

Laccaria trullisata (Ellis) Peck

In sand near Karner, Albany county, growing with Hebeloma colvini Peck. H. D. House, October 14, 1917.

Melampsoropsis ledicola (Peck) Arthur

Upon the occasion of a visit to "Agate bog" near Cohasset on Fourth lake, northern Herkimer county on June 27, 1917, there was observed a great abundance of this rust upon the leaves of Ledum groenlandicum. W. P. Fraser (Mycologia, 3:70. 1911; 4:177. 1912) has connected by means of cultural experiments, this rust with Peridermium decolorans Peck. Accordingly another visit was made to this bog on August 8th, and a corresponding abundance of the Peridermium upon Picea mariana was observed. The absence of any species of Peridermium upon Abies or Tsuga in the immediate vicinity of this bog seems to corroborate Fraser's results.

The rust upon Ledum has been collected by Doctor Peck in Bergen swamp, Genesee county; Lake Pleasant, Hamilton county; Sandlake, Rensselaer county, and on Mount Marcy, Essex county. The Peridermium upon Picea mariana has been collected by Doctor Peck at Sandlake, Mount Colvin, North Elba and Elizabethtown, and by H. D. House at Featherstone lake, Schenectady county.

Macrophoma ulmicola Dearness

On dead branches of Ulmus americana L. Vaughns, Washington county. S. H. Burnham, no. 126. March 29, 1916.

Melogramma melogramma (Bull.)

Variolaria melogramma Bull. Champ. 1:182. pl. 492. f. 1. 1790. Sphaeria ocellata Pers. 1797. Sphaeria melogramma Pers. 1801. Melogramma bulliardii Tul. 1863. Melogramma vagans DeNot. 1857. Diatrype lateritia Ellis, 1882.

On bark of dead limbs of Betula lutea, LaSalle, Niagara county, G. W. Clinton. Meadowdale, Albany county, Dr C. H. Peck. Alcove, Albany county, C. L. Shear, no. 176.

Humaria peckii House, sp. nov.

Apothecia at first closed, finally opening and becoming shallow, cup-shaped to scutellate, externally pallid, subpruinose, surrounded at the base with a mass of white mycelium, reaching a diameter of 4 mm; hymenium slightly concave, pale-yellow or subochraceous; asci cylindric or subcylindric, reaching a length of 160 μ and a diameter of 12 μ, attenuated below into a rather long stemlike base; spores ellipsoid or ovoid, 1-seriate, each containing one oil-drop, about 8 x 12 μ; paraphyses not exceeding 2 μ in diameter, scarcely thickened above.

On damp decaying hay accompanied by a, Sclerotium. Type collected at Menands, Albany county, N. Y., April 1890, by Dr C. H. Peck.

Midotis irregularis (Schw.) Sacc.

On decayed log of Acer. North Elba, Essex county. C. H. Peck, September 11, 1905. (Determined by Dr F. J. Seaver.)

Mycosyrinx osmundae Peck

Transforming portions of the fronds of Osmunda regalis, into characteristic brown "smutlike" masses. Common at Mud pond near Zurich, Wayne county. H. D. House, July 2, 1917. This has also been collected by Doctor Peck at Knox, by S. H. Burnham at Cambridge, and C. G. Pringle (no. 1541) in Vermont.

Nolanea peckii House, nom. nov.

Agaricus conicus Peck, Ann. Rep't N. Y. State Mus. 24:66. 1872. Not Ag. conicus Scop. 1772.

Nolanea conica Peck; Sacc. Syll. 5:723. 1887.

Among moss and on rotten wood in swamp. Sandlake, C. H. Peck, August 1870. Newfoundland, Waghorne no. 287.

Odontia trachytricha (E. & E.) Burt

(Peniophora trachytricha *E. & E.*, Odontia acerina *Peck*).

Karner, Albany county, H. D. House (no 14.207), October 8, 1914. (Det. Burt).

Peniophora cinerescens (Schw.) Sacc.

Syracuse, L. M. underwood no. 34, 1886 (det. by Burt).

Peniophora glebulosa Bresadola

On dead branches of Salix, Sandlake, C. H. Peck (no. T. 15, as det. by Burt).

Peniophora greschickii Bresadola

On dead limbs of Thuya occidentalis, North River, Warren county, C. H. Peck, September 27, 1911 (det. by Burt).

Peniophora incarnata (Fries) Massee

Star Lake, on dead branches of Fagus, C. H. Peck, August 12, 1907. On dead limbs of Prunus pennsylvanica, Albany, H. D. House, November 26, 1915 (det. by Burt).

Peniophora longispora Pat.

On decayed wood, East Berne, Albany county, C. H. Peck (det. by Burt).

Peniophora sulphurina (Karst.) v. Hohn & Litsch.

On decayed wood of Picea, Rainbow, Franklin county, C. H. Peck (det. by Burt).

Phlyctaena phlyctaenoides (B. & C.)

Septoria phlyctaenoides B. & C. N. Am. Fungi No. 441.
Phlyctaena septorioides Sacc. Syll. 3:594. 1884.

On dead stems of Phytolacca americana. Knowersville, Albany and Altamont, Albany county (C. H. Peck). Jamesville, Onondaga county (L. M. Underwood).

Phyllosticta arnicae Fckl.

On leaves of Arnica cordifolia. Evardo, Montana. M. E. Jones, no. 10625, July 13, 1909. Spores colorless, 5 x 1 μ.

Pilosace peckii House, nom. nov.

Agaricus (Pilosace) eximius Peck, 24th Ann. Rep't N. Y. State Mus., p. 70. 1872. Not Agaricus eximius C. P. Laest. Lapp. Torn. 45. 1860.

Pilosace eximia Peck; Sacc. Syll. 5: 1012. 1887. Peck, N. Y. State Mus. Bull. 75, p. 25. 1904.

A rare species, collected by Doctor Peck at Grieg, Lewis county, in August 1870.

Pseudoplectania nigrella (Pers.) Fckl.

On ground in pine woods, Sandlake, Rensselaer county, C. H. Peck, April. (Det. by Dr F. J. Seaver.)

Psilocybe cavipes House, nom. nov.

Agaricus (Psilocybe) unicolor Peck, 53d Ann. Rep't N. Y. State Mus., p. 845. 1901. Not Agaricus unicolor Bull. Herb. Fr. pl. 530, f. 2. 1791: Fl. Dan. t. 1071. f. 1; Fries, Hym. Eur. 225. 1874.

Psilocybe unicolor Peck; Sacc. Syll. 17: 89. 1905. Peck, N. Y. State Mus. Bul. 157, p. 102. 1912.

A rare species, collected by Doctor Peck on prostrate decayed mossy trunks of trees in woods near Savannah, Wayne county, in 1899.

Septoria cryptotaeniae Ell. & Rau

On living and languishing leaves of Deringia canadensis. Albany, H. D. House, July 24, 1916.

Spatularia velutipes C. & F.

In mossy woods near Cohasset on Fourth lake, northern Herkimer county, H. D. House, August 8, 1917.

Sphaerella clintoniana House, nom. nov.

Sphaerella rhododendrii Cooke, Jour. Bot. 108. 1883. Not S. rhododendri DeNot. Sf. Ital. 86. pl. 96.

On fallen leaves of Rhododendron maximum. Buffalo. G. W. Clinton.

Sphaerella tsugae House, nom. nov.

Sphaerella conigena Peck, 38th Rep't N. Y. State Mus. 104. 1885. Not S. conigena Peck, Rep't N. Y. State Mus. 33: 34. 1880.

Sphaerella peckii Sacc. Syll. 9: 649. 1891. Not. S. peckii Speg. 1880.

On fallen cones of Tsuga canadensis. Helderberg mountains and Knowersville (C. H. Peck).

Stereum rameale Schw.

On dead branches of Prunus pennsylvanica. Albany. H. D. House, November 26, 1916.

Stereum rufum Fr.

(Epicr. 553. 1838.)

Thelephora rufo-marginata Pers. Myc. Eur. 1: 124. 1822.

Thelephora rufa Fr. El. 127. 1828.

Tubercularia pezizoidea Schw. [E. Hitchc. Cat. Pl. Amherst 64. 1829, name only] Syn. Am. bor. 301. n. 3013. 1831.

Hypocrea richardsoni Berk. & Mont. Frost, Proc. Bost. Soc. Nat. Hist. 12: 80. 1869, name only Grevillea 4: 14. 1875.

Corticium pezizoideum Schrenk, Bull. Torrey Bot. Club 21: 385. 1894. Not C. pezizoideum E. & E. 1888.

This is a common species in New York, all collections seen being upon Populus tremuloides and Populus grandidentata. Saccardo refers "Thelephora rufo-marginata Pers." to this species, but Persoon gives as the habitat of it "ad ramos Tiliaceos," and unless "Auricularia cinerea Sowerby" (Fung. t. 388 f. 3) to which Persoon refers is unquestionably this species, Persoon's name can be referred to this species only with considerable doubt.

The species is represented in the state herbarium by the following collections: Karner (C. H. Peck); Alcove (C. L. Shear, no. 88, August 1892). Horicon (C. H. Peck, July 25, 1905). North Elba (C. H. Peck, October 15, 1901). Saranac Inn (P. L. Spaulding, May 31, 1909). Albany (H. D. House, May 3, 1914; October 22, 1916).

It was also collected in Colorado by Brandegee (no. 11, communicated by E. A. Rau), June 7, 1880.

Stereum versiforme B. & C.

On dead limbs of Populus tremuloides, Prunus virginiana, and Sassafras sassafras (H. D. House, October 28, and November 2, 1916). All resupinate. Det. by Burt.

Venturia dickiei (B. & Br.) Ces. & DeNot.

On living, languishing and dead leaves of Linnaea americana Forbes, in mossy woods near Cohasset on Fourth lake, northern Herkimer county. H. D. House, June 27, 1917. The only other collection of this rare species in New York was made many years ago by Doctor Peck on Mount Marcy.

Stereum ochraceoflavum Schw.

On dead twigs of Quercus ilicifolia, Albany, H. D. House, November 17, 1916 (det. by Burt).

Stereum erumpens Burt

On dead limbs of Sassafras sassafras, Karner, Albany county, H. D. House, April 22, 1915. New Scotland, Albany county, C. H. Peck (no. T.28), (det. by Burt).

Rhizopogon occidentalis Zeller & Dodge

(Ann. Missouri Bot. Gard. 5: 14. 1918)

Moscow, Idaho, L. F. Henderson, no. 5168 (type), in herbarium (N. Y. State Mus.). Pacific Grove, M. L. Sutliff. California, W. R. Dudley, no. 5325.

Messrs Zeller and Dodge in "Rhizopogon of North America" (Ann. Mo. Bot. Gard., 5:1–30, February 1918), report the following species from New York: R. luteolus Fries & Nordholm (Westport, C. H. Peck), R. roseolus (Corda) Zeller & Dodge and R. rubescens Tulasne.

NEW OR NOTEWORTHY SPECIES OF FUNGI

JOHN DEARNESS AND HOMER D. HOUSE

Anthostoma peckii Dearness & House, sp. nov.

Stromata scattered in the cortex, free from the wood and so coming off with the bark; covered by the thin cuticle which is ruptured by the minute black ostiola. Perithecia 4 to 12, loosely immersed in the slight stroma or merely valsoid, dark brown, 180 to 320 μ in diameter. Asci long cylindric, p. sp. 60 to 80 x 8 to 10 μ, paraphyses exceeding the asci. Sporidia brown, not opake, uniseriate, sometimes slightly overlapping, broadly elliptic or ovate, 8 to 10 x 7 to 9 μ.

On dead stems of Menispermum canadense L., North Greenbush. C. H. Peck, April. Type in the herbarium of the New York State Museum.

Anthostomella closterium (B. & C.) Sacc.

On dead stems of Opulaster opulifolius (L.) Kuntze, West Albany, N. Y. C. H. Peck, May. Sporidia in thin gelatinous envelopes, prolonged into a spur 30 to 50 μ long at each end.

Anthostomella picaceum (C. & E.) Sacc.

On decorticated and partially decayed wood of Acer. Catskill mountains. C. H. Peck. This material apparently does not differ in any marked degree from the typical form from New Jersey on Vaccinium.

Asterella fraxinina Dearness & House, sp. nov.

Perithecia subcuticular, developed upon an innate brown subicle of septate radiating fibers, 12 to 15 μ thick at the base, brown, depressed, about 150 μ in diameter. Ostiola short, about 20 μ wide. Asci obtuse, obclavate, widest at about one-third of their length from the base, 45 to 54 x 7 to 9 μ; paraphyses obscure. Sporidia hyaline, uniseptate, lower cell larger than the upper, some of them curved, 12 x 3 to 3.5 μ.

On old fallen petioles of Fraxinus nigra Marsh. Sandlake. C. H. Peck, May. Type in herbarium of the New York State Museum.

Aylographum onocleae Dearness & House, sp. nov.

Perithecia innate, appearing dull black through the epidermis, 1 to 2 mm or by confluence, 3 to 4 mm long by .25 to .35 mm wide, simple or seldom confluently branched; lip nearly closed, concealed by the epidermis, split longitudinally into fibers. Asci cylindric, straight or curved, 33 to 55 x 6 to 7.5 μ; paraphyses none or obscure. Sporidia biseriate, elliptic-oblong, inequilateral, uniseptate, 9 to 12 x 3 μ, not constricted.

On dead stems of Onoclea struthiopteris (L.) Hoffm. (Matteuccia struthiopteris (L.) Todaro), Shelburne, Vermont. C. G. Pringle, no. 1032. May 1880.

This is quite distinct from Aylographum filicinum Lib. which has ovate-oblong, sparse perithecia and ovate asci; but may prove to be the ascigerous stage of Leptostroma litigiosum or some closely related species.

Caliciopsis pinea Peck

A rare and interesting fungus described by Peck in 1880, and more recently collected by R. G. Pierce, November 1916, on shrunken areas of the cortex of living or recently dead branches of Pinus strobus, near Keene, Essex county. This seems to be the first record of its collection in New York since it was originally found by Doctor Peck. Also collected in Vermont by C. G. Pringle.

In Mr Pierce's collection the fungus is mixed with or grows upon Graphis scripta, a lichen, a condition not mentioned by Peck and its relationship to the lichen, if any, can not be determined without further examination of fresh material. The mature fungus has elongated black, slender, " ascomata," 2 mm high or higher, thickened at the base, the apex urceolate-capitate and easily broken off in dried specimens; asci ovoid, slender-stipitate; spores elliptical, 5 to 6 μ long.

In this connection it may be noted that the genus Hypsotheca E. & E. (1885), is in all essential features the same as Caliciopsis Peck.

Anthostoma cercidicolum (B. & C.) Sacc.

(Syll. 1: 306. 1882)

Diatrype cercidicola B. & C.; Peck, Rep't N. Y. State Mus. 25: 101. 1873. Cke. Grevillea 14: 16. 1885. E. & E. Pyren. 582. 1892.

Hypoxylon suborbiculare Peck, Rep't N. Y. State Mus. 30: 63. 1878. (Not Hypoxylon suborbiculare Welw. & Curr. 1867 = Nummularia suborbicularis Sacc. 1882)
Fuckelia cercidicola Cke. Grevillea 12: 52. 1883.
Nummularia lateritia E. & E. Proc. Phila. Acad. 144, 1893.

This interesting species was first described by Peck as "Diatrype cercidicola B. & C.," from specimens collected near Buffalo in 1871 by G. W. Clinton. The host was unknown, but is now recognized as Fraxinus nigra. The description is not by Berkeley and neither Berkeley nor Curtis had ever seen the Clinton specimens upon which Peck based his description. Peck says it was like a specimen received from Curtis under that name. That specimen can not now be found in the state herbarium and may have been returned to Curtis. The host of Peck's species was not Cercis, and the Curtis specimen, if in existence, may be at Kew, and was probably not satisfactory for diagnosis since the name was never published except as by Peck.

Peck later discovered better specimens and repudiated the earlier name by redescribing the fungus as Hypoxylon suborbiculare. He adds to the confusion, however, by stating that the host was Acer saccharum. Examination of the host shows it to be Fraxinus nigra. In 1890 Professor Dearness sent specimens of this to J. B. Ellis, which were identified as Nummularia rumpens Cooke, but in 1893 Ellis described it as Nummularia lateritia. The Dearness collections were distributed as — E. & E. North American Fungi no. 3033 and Fungi Columbiana no. 326.

Peck makes no mention of the name given to Clinton's earlier collection when he described Hypoxylon suborbiculare. That he regarded them as the same, at least later on, is shown by the fact that he changed the name on the label of the Clinton specimen to read "Hypoxylon suborbiculare Peck. Reported as Diatrype cercidicola B. & C."

The name "cercidicola" is most unfortunate, but apparently must stand. Peck's later name "suborbiculare" is invalidated by the earlier use of that name both in Hypoxylon and in Nummularia.

Specimens examined from New York are all upon Fraxinus nigra, viz: Buffalo (G. W. Clinton, type of Diatrype cercidicola B. & C.; Peck): Sandlake (C. H. Peck, type of

Hypoxylon suborbiculare Peck): Sanford's Corners, Vernoa, South Ballston and Mechanicville (C. H. Peck).

Camarosporium dichomeroides Brun.

On dead branches of Sambucus canadensis L. North Greenbush, C. H. Peck, June.

Ceratostoma avocetta (C. & E.) Sacc.

On much decayed wood of Fagus. North Elba, Essex county. C. H. Peck, August. Compared with C. avocetta collected at Sonntagsberg, Austria, by Strasser and determined by Rehm.

Cercospora depazeoides Sacc.

On living leaves of Sambucus canadensis Linn. Karner, Albany county. H. D. House, October 18, 1917.

Coccophacidium crustaceum (Curt.) Durand

On dead twigs and branches of Pinus strobus, between Elizabethtown and Keene, Essex county. R. G. Pierce, November 1916.

A rather common species and represented in the state herbarium by several collections under the name of Phacidium pini, which it resembles. Collected October 28, 1917, on the same host at Albany by H. D. House.

Coniosporium tumulosum Sacc.

On decorticated and weathered wood of Thuya occidentalis, Edmond's ponds, Adirondack mountains. C. H. Peck, July.

Coryneum triseptatum Peck

Originally described on fallen leaves of Rhododendron maximum from Forestburg, N. Y. A collection of Lophodermium sphaeroides (A. & S.) Duby, on leaves of Ledum groenlandicum (Sandlake, C. H. Peck, September) contains a single leaf of Ledum upon which is Coryneum triseptatum Peck, with characteristic 3-septate spores, 12 to 15 x 4 to 4.5 μ, on stalks 20 to 45 x 1.5 μ.

Cryptospora aculeans (Schw.) E. & E.

The type of Diaporthe inornata Peck on Rhus typhina, Cabin John bridge, Maryland (E. Bartholomew, no.

4326, June 15, 1910) shows no essential differences from Cryptospora aculeans. A collection on Rhus copallina (Sylvan Beach, N. Y., C. H. Peck, July) and determined by him as Diaporthe albovelata (B. & C.) Sacc. is also the same.

Cytospora sassafras E. & E.

On dead shoots of Sassafras sassafras, Karner, Albany county, N. Y. H. D. House, November 2, 1916. Albany, H. D. House, no. 14.2, August 30, 1913 (duplicate of material upon which Cytospora phomopsis Saccardo is based).

The descriptions of C. phomopsis and C. sassafras are nearly alike. Saccardo says "4 to 5 loculigeris," Ellis and Everhart say "multilocularibus." The smallest number counted in the Karner material was eight. Saccardo says "intus griseus" while Ellis and Everhart do not mention the interior color.

The description of Sphaeria albofarcta Schw. (Cytospora albofarcta Starb.) places so much emphasis upon the white interior that it may not be the same as C. sassafras E. & E.

Dendrophoma variabilis Dearness & House, sp. nov.

Pycnidia 90 to 350 μ in diameter, seated in the xylem, sometimes piercing the cuticle but generally decorticating it, black, shining, subcoriaceous, globose-conic with short ostiolum to lenticular with elongated or cylindric ostiolum up to .3 mm long. Walls consisting of a single layer of fairly regular, dark-brown polygonal cells, about 15 μ in diameter, which are covered within by a stratum of hyaline branched conidiophores, 25 to 250 x 1 to 1.5 μ, seated upon a dilutely colored prosenchymatous, mycelial layer and bearing oblong, hyaline conidia 4.5 to 6 x 1 μ.

On dead stems of Eupatorium maculatum L. North Greenbush. C. H. Peck, May.

Dermatea acerina (Peck) Rehm

Griffins, N. Y., on Acer saccharum. C. H. Peck (as Tympanis aceris Peck). Caroga. C. H. Peck (as Scleroderris acerina (Peck) Sacc.). Sandlake, on Acer rubrum. C. H. Peck, July. North Elba, on Acer saccharum. C. H. Peck. Old Forge on Acer saccharum. C. H. Peck, August, 1892. Sandlake on Acer saccharum. C. H. Peck, July, no. 6 S (duplicate of this was described by Saccardo as Phaeangium peckianum, and the specimen retained in the state herbarium is not distinct from Dermatea acerina (Peck) Rehm. It has also been collected at Middlebury, Vt. (E. A. Burt, June 25, 1896, in N. Y. State herbarium).

Diaporthe artospora Dearness & House, sp. nov.

Perithecia thickly and evenly scattered in the unaltered cortex, not reaching to or blackening the xylem, black, 200 μ in diameter. Ostiola long conic, 50 μ thick at base. Asci fusoid, 18 to 24 x 6 to 9 μ. Sporidia hyaline, oblong, uniseptate, 7 to 9 x 1 to 1.5 μ.

On fallen petioles of Fraxinus nigra. Sandlake, N. Y. C. H. Peck, May (year not indicated).

Diaporthe racemula (C. & P.) Sacc.

There are two collections of this in the state herbarium, viz, "Aiden Lair, Essex county. C. H. Peck, July 1873" and "Lower Ausable. C. H. Peck, July 1875." Both are on Epilobium angustifolium (dead stems). The latter is the better collection and perhaps the type of Sphaeria (Caulicolae) racemula C. & P. (29th Rep't N. Y. State Mus., p. 65. 1878). It does not appear to be different from Diaporthe epilobii Cooke. The description by Peck is incomplete and should state that the asci and sporidia are very variable; asci 18 to 45 x 4 to 8 μ; sporidia 9 to 12 x 2.5 to 3.5 μ.

Diaporthe spiculosa (A. & S.) Nitsch.

On dead branches of Fraxinus americana. Catskill mountains. C. H. Peck (Reported as Valsa crataegi in 31st Rep't N. Y. State Museum, p. 50). On dead branches of Fraxinus nigra. Verona, N. Y. C. H. Peck, August 1879.

Diatrypella aspera (Fr.) Nits.

This species is reported by Peck (28th Rep't N. Y. State Mus., p. 71. 1876) from Tyre, N. Y., on Cornus. Re-examination of the material shows that the host is Cephalanthus occidentalis and that the fungus thereon is Diatrypella cephalanthi (Schw.) Sacc. Unless other and authentic records exist of the occurrence of D. aspera, it must be omitted from New York lists.

Diatrypella missouriensis E. & E.

On dead branches of Corylus. West Albany. C. H. Peck. November (as Diatrypella frostii (Peck) Sacc.). The narrow, relatively few-spored asci and the other characters appear to distinguish this from D. frostii, the typical form of which is found on Acer.

Dinemasporium hispidulum (Schrad.) Sacc.

On dead and decorticated shoots of Sambucus canadensis. North Greenbush. C. H. Peck, June. Also collected by Peck on decayed wood of Ulmus at Menands, and on shoots of Viburnum dentatum at West Albany.

Dinemasporium robiniae Gerard

D. acerinum Peck

Poughkeepsie, on decorticated wood of Robinia pseudoacacia, W. R. Gerard (cotype material). Albany, on decorticated wood, of Ulmus americana, C. H. Peck. Buffalo, on decorticated wood of Acer, G. W. Clinton (type of D. acerinum Peck, 26th Rep't, p. 77). Bethlehem, on decorticated wood of Ulmus, C. H. Peck (as D. hispidulum var.). North Greenbush on decorticated wood of Populus deltoides, C. H. Peck (as D. acerinum). Petersburg on decorticated wood of Acer, C. H. Peck (as D. robiniae). Carlton, Orleans county, on dead, decorticated branches of Rhus toxicodendron, C. E. Fairman, March 1, 1888 (as D. acerinum Pk.).

The spores of D. robiniae Gerard are generally but not invariably smaller than the others cited. No other difference appears. The Albany collection on Ulmus has many spores larger than any seen in the so-called D. acerinum. It has also the longest pycnidial bristles, but it grades into D. acerinum and into the type of D. robiniae. A careful comparison of the material cited above would seem to indicate that D. acerinum is but a mere form, and not a constant form, of D. robiniae.

Diplodia sarmentorum Fr.

D. petiolaris Peck

In 1872 Doctor Peck described a Diplodia petiolaris on what he supposed to be fallen petioles of Fraxinus. An examination of the type material reveals the fact that he must have erred in the determination of the host which proves to be fragments of the dead stems of Menispermum canadense, and the fungus thereon proves to be Diplodia sarmentorum Fr. which has been collected several times in this State.

Dothiorella hicoriae Dearness & House, sp. nov.

Stromata seriately seated in the cortex, erumpent through the epidermis and sometimes throwing it off, often marked by the pale orange masses of exuded spores, black or grayish, globose or truncate, .5 to 1.5 mm in diameter, imperfectly locellate, 3 to 8 cells separated wholly or in part by thin, dark brown partitions, opening into one, two or more black, shining ostiolae. Spores orange in mass, hyaline, ovoid, 15 to 18 x 10 to 12 μ.

On dead bark of twigs of Hicoria alba. Greenbush, N. Y. C. H. Peck, May.

This appears quite distinct from a form of Dothiorella quercina C. & E., sometimes found on Hicoria, and which has (in the variety on Hicoria) spores much larger and elliptic, 22–36 μ in length.

Eutypa crustata (Fr.) Sacc.

On dead bark of Betula lutea. Bashfish, N. Y. C. H. Peck. July. This is reported in Europe on Acer pseudoplatanus and on Fagus sylvatica.

Gloeosporium aridum E. & E.

On living leaves of Fraxinus americana. Oneida, Madison county. H. H. House, August 1916. Also collected at Menands, Albany county by C. H. Peck, June 1888 (type of Gloeosporium irregulare Peck), and at Vaughns, Washington county, by S. H. Burnham, June 30, 1908.

Gloeosporium castanopsidis Dearness & House, sp. nov.

Spots gray-brown, epiphyllous, hardly visible on the lower side of the leaf, subcircular, 3 to 8 mm broad, not definitely bordered, sometimes confluent. Acervuli epiphyllous, numerous, large, close together, pale in the center, .1 to .5 mm; spores bacillary, 4 x 1.2 to 1.5 μ.

On living and languishing leaves of Castanopsis. Mount Shasta, California. C. G. Pringle, no. 117.

Gloeosporium hedericolum Maublanc

On edge of dead or languishing spots on leaves of the "English ivy," Hedera helix. Yonkers, N. Y. H. D. House, May 8, 1915.

Gloniella ovata (Cooke) Sacc.

On decorticated and weathered wood of Castanea dentata. Orient, N. Y. Roy Latham, no. 824. May 20, 1916. The type of this species (collected by Ravenel in Carolina) is said to be on oak.

Gloniella parvulata Dearness & House, sp. nov.

Perithecia 250 to 350 μ in diameter, scattered, nearly black, short-elliptic, dimidiate, erumpent but covered by a very thin layer of wood-fibers, striate where exposed; mouth nearly round or short-cleft. Asci 60 to 95 x 12 to 15 μ, 6 to 8 μ thick at the apex; paraphyses abundant, longer than the asci. Sporidia hyaline, spirally 2 to 3-seriate, 3 to 5-septate, mostly 3-septate, constricted, the second cell from the top widest, 20 to 24 x 6 to 8 μ.

On decorticated and weathered wood of Thuja occidentalis. Brownsville. C. H. Peck, June.

Gloniella vaccinicola Dearness & House, sp. nov.

Perithecia black, minute, 90 to 250 μ in diameter, round or ovate, seated in the cortex, thickly scattered, stellately rupturing the cuticle; lips or rim not definitely distinct from the black paraphysal layer overlying the hyaline asci. Asci parallel, 75 to 90 x 10 to 12 μ, paraphyses not distinct between the asci, interwoven in a thick layer, 15 μ thick, above them. Sporidia fusoid, hyaline, 3 to 5-septate, 18 to 21 x 4 to 5 μ, obliquely 2 to 3-seriate in the asci.

On dead branchlets of Vaccinium corymbosum. Sandlake, N. Y. C. H. Peck (no date given). This was designated by Doctor Peck as Sphaeria vaccinicola Schw., the type of which is said to be sterile, and which is probably a quite different species.

Glonium pruni Dearness & House, sp. nov.

Perithecia dimidiate, subcarbonous, dull black, evenly and thickly scattered, elliptic at base, .3 to .5 x .15 to .20 mm subcuticular, opening by a nearly round pore or a short cleft. Asci 75 to 100 x 10 to 12 μ, sessile, clavate-cylindric, narrow at the base, overtopped by the linear, branching, hyaline paraphyses. Sporidia hyaline, uniseptate, biseriate in half to three-fourths of the length of the asci, somewhat constricted, 13 to 16 x 4.5 to 5.5 μ.

On the bark of dead branches of Prunus pennsylvanica. Catskill mountains. C. H. Peck (no date).

Glutinium exasperans Fr.

On decorticated and weathered wood of Pinus strobus. Long Lake, N. Y. C. H. Peck, July.

Hysterium proteiforme Duby

On dead bark of Ulmus americana. New Baltimore, N. Y. C. H. Peck, May.

Illosporium coccinellum Cooke

Forming tiny bright red dots on the dead bark of spruce (Picea rubens). North Elba, N. Y. C. H. Peck, August.

Labrella celastri Dearness & House, sp. nov.

Pycnidia black, shining, thickly scattered, separate, sometimes confluent, circular or subcircular, cleft lengthwise sometimes cleft circularly, 100 to 200 μ in diameter. Conidia hyaline, 4 x 1 μ, on narrow conidiophores, 8 to 15 μ long.

On dead stems of Celastrus scandens. Karner, Albany county. H. D. House, April 29, 1916.

Leptothyrium celastri B. & C., founded upon a New England collection, agrees with this in the main according to the description, except that the conidia are described as 25 μ long.

Laestadia caricis Dearness & House, sp. nov.

Perithecia depressed-globose, scattered, black with a whitish stoma, minute, 90 to 100 μ, innate, opening through the upper cuticle of the host leaf. Asci aparaphysate, ovate to cylindric, 33 to 60 μ, mostly 45 to 50 x 8 to 10 μ. Sporidia hyaline, subelliptic or fusoid, inequilateral, usually wider in the upper half, 12 to 14 x 3.5 to 4.5 μ, some of them appearing pseudoseptate.

On dead leaves of Carex stricta. Carey pond near Camp Fulton on Fourth lake, northern Herkimer county, N. Y. H. D. House, August 9, 1917.

The dead leaves of Carex stricta at Carey pond bear in addition to the Laestadia, an inextricable mixture of other fungi, including a Leptosphaeria, an Alternaria, a Cladosporium, a Sporodesmium and a Hysteriaceous species.

Laestadia coptis (Schw.) E. & E.

(Sphaeria coptis Schw. Syn. Amer. Bor. n. 1783)

On languishing leaves of Coptis trifolia, near "Cohasset" on Fourth lake, northern Herkimer county, H. D. House, June 27, 1917 (with Septoria coptidis B. & C. on same leaves). Also collected at Sandlake, Rensselaer county, by Dr C. H. Peck, May.

Laestadia smilacinae Dearness & House, sp. nov.

Perithecia black, globose-conic, thickly scattered over the whole leaf or upon large parts of it, innate, erumpent through both surfaces of the leaf, but chiefly through the lower surface, 90 to 100 μ in diameter; stoma a pore, mostly bordered or stuffed with whitish matter. Asci 20 to 30 in a perithecia, aparaphysate, cylindrical, 40 to 60 x 10 to 12 μ. Sporidia irregularly elliptical, continuous, grumous, 12 x 6 μ.

On preceding season's leaves of Vagnera stellata. Karner, Albany county. C. H. Peck, April.

Rarely a spore is seen which is apparently septate and suggesting Mycosphaerella, but the septation, if real, is so rare that the species is placed in Laestadia. In this connection it might be noted that Sphaeria polygonati Schw. on an allied host, might possibly be the same as this, but the description is so incomplete and vague, that it is impossible to say whether it is the same as Laestadia smilacinae or not.

Leptosphaeria acuta (Moug. & Neestl.) Karst.

On dead stems of Collinsonia canadensis. North Greenbush. C. H. Peck, July. Sporidia yellowish brown, 30 to 40 x 4 to 5 μ. This species is described from Europe on dead stems of Urtica, Vitalba and Solanum.

Leptostromella chenopodii Dearness & House, sp. nov.

Pycnidia pale yellowish brown, thickly scattered, mostly circular and about .2 mm in diameter, occasionally elongate or irregular, up to .5 mm by .2 mm. Ostiolum present and agreeing in shape with the pycnidium, circular to elongate. When the pycnidia are numerous the cuticle is generally raised and imparting to such areas of the stem a pale or silvery color. Conidia long, narrow and hamate, 15 to 30 x 1.5 to 2 μ, on short narrow conidiophores.

On dead stems of Chenopodium album. Orient, N. Y. Roy Latham, April 19, 1915.

Many of the pycnidia are small, nearly circular bodies and were it not for the usually distinct ostiola this might be taken for a species of Melophia.

Leptothyrium castanicolum E. & E.

On fallen leaves of Castanea dentata. Bolton, Warren county, N. Y. C. H. Peck, September 12, 1901.

Lophiostoma insidiosum (Desm.) Ces. & DeNot.

On dead decorticated shoots of Sambucus canadensis L. North Greenbush. C. H. Peck, June (year not indicated). This fungus has been identified in Europe upon a wide range of hosts and is also subject to great variation, no less than thirteen forms being mentioned by Saccardo (Syll. 2: 704).

Lophiotrema praemorsum (Lasch) Sacc.

On dead stems of Rubus strigosus. West Albany. C. H. Peck, October. (Reported as Lophiostoma jerdoni B. & Br.). Catskill mountains, on dead stems of Rubus odoratus. C. H. Peck (reported as Lophiostoma bicuspidata Cke.).

Macrosporium saponariae Peck

On living and languishing leaves of Silene stellata. Karner, Albany county, N. Y. H. D. House, October 28, 1916.

Marsonia potentillae (Desm.) Fisch.

On living and languishing or nearly dead leaves of Argentina anserina (L.) Rydb. (Potentilla anserina L.), North Bay, Oneida county. H. D. House, August 17, 1917.

Ascochyta colorata Peck, represented by several collections on leaves of Fragaria, in the state herbarium, seems to be the same. Both have somewhat curved hyaline spores 19 to 22 x 4 to 4.5 μ. Marsonia potentillae is said by Fuckel to be the conidial stage of Venturia potentillae (Fr.) Cooke. Not reported from New York under that name, although Peck has collected it at North Greenbush on Potentilla canadensis and determined by him as Dothidea potentillae (Schw.)

Melanomma inspissum (Schw.) Cooke

On decorticated wood of Fagus grandifolia Erhr. Ampersand, N. Y. C. H. Peck, September 1896. The minute ostiola and the triseptate, fuscus spores, 12 to 14 μ long separate this from M. pulvis-pyrius (Pers.) Fckl.

Metasphaeria squamata (C. & E.) Sacc.

On decorticated and weathered wood of Pinus. Santa Rita mountains, Arizona. C. G. Pringle, no. 50. May 29, 1881.

Mycosphaerella opuntiae (E. & E.) Dearness, comb. nov.

(Sphaerella opuntiae E. & E. Jour. Myc. 1888, p. 97.)

On dead or languishing leaves of Opuntia opuntia (L.) Coult. Long Island, C. H. Peck (date not indicated).

Mytilidion fusisporum (Cooke) Sacc.

On decorticated and weathered wood of Pinus strobus. North Elba, Essex county. C. H. Peck, August 1898. Described by Cooke on bark and branches of pine in England.

Patellaria atrata (Hedw.) Fr.

(Lecanidion atratum Rabenh.)

On decorticated and much weathered wood of Acer. Menands, Albany county. C. H. Peck.

Phlyctaena arcuata Berkeley

On dead stems of Helianthus annuus. Orient, Long Island. Roy Latham, no. 726. April 2, 1916. Spores filiform, arcuate to falcate, 25 μ long.

Phyllachora graminis panici Shear

On leaves of Panicum clandestinum. Hempstead, Long Island. H. D. House, September 8, 1916.

Phyllachora haydeni (B. & C.) Dearness, comb. nov.

Dothidea haydeni B. & C. North Am. Fungi. n. 881.
Ophiodothis haydeni Sacc. Syll., 2: 653. 1883.

Prof. G. F. Atkinson (Jour. Myc., 11 : 257) says that the Berkeley material shows only conidia. Professor Dearness has collected this on Solidago stems in Ontario, June 1888, and found asci, with spores 15 x 3 to 5 μ; conidia 15 to 50 x 3.5 μ. What appears to be the same is a collection by J. B. Ellis, Newfield, N. J., October 1874, on dead stems of Aster dumosus (comm. to Peck).

Phyllosticta omphaleae Dearness & House, sp. nov.

Discoloring extensive areas, 2 to 3 cm broad along the margin of the leaves, sordid yellow at first and later whitening, bordered by a raised reddish-brown margin. Pycnidia epiphyllous, erumpent, black, very numerous, 4 or 5 to a square millimeter in the whitened portions of the spots; the perforate stomata enlarging with age giving a melanconial appearance to the old pycnidia. Conidia hyaline, oblong, continuous to 2-nucleate, 4 to 6 x 2 μ, on sporophores of various lengths up to 15 μ.

On leaves of Omphalia sp. (Euphorbiaceae). Cajimas, Cuba. C. F. Baker, no. 2889. March 14, 1906 (Type in herbarium of N. Y. State Museum).

Ramularia impatientis Peck

Doctor Peck (34th Rep't, p. 47) states that the spores are epiphyllous. Specimens collected later by Peck at Genesee falls, on leaves of Impatiens fulva, have spores amphigenous and even more abundant on the lower side of the leaf than on the upper surface.

Rhabdospora mirabilissima (Peck) Dearness, comb. nov.

Septoria mirabilissima Peck, N. Y. State Mus. Bul. 157, p. 33, 115. 1912.

On living stems of white pine seedlings, Saranac lake plantations. C. R. Pettis, April 1911. The spores are long and tortuous or ribbonlike with a peculiar greenish color. The characters place it in Rhabdospora rather than in Septoria.

It is obviously related to, and should be compared with authentic European material of Rhabdospora pini (B. & C.) Sacc. (Cryptosporium pini B. & C.). The fact that the disease is quite injurious to young living pines and has been found in the state nursery, makes further investigation desirable which may lead to its identification with the European species mentioned above.

Rhopographus clavisporus (C. & P.) Sacc.

On dead culms of Phragmitis phragmitis (L.) Karst. Bergen swamp, Genesee county. H. D. House, August 14, 1916, The type (Hysterium clavisporum, Dothidea clavispora C. & P.) was collected on the same host at Tyre, September 1871. Doctor Peck also collected it at Watkins, N. Y.

Rosellinia obtusissima (B. & C.) Sacc.

On decorticated branches of Acer. Sandlake. C. H. Peck. Perithecia setose; sporidia very obtuse, elliptic, nearly as broad as long, 12 to 14 x 9 to 11 μ. The type of Sphaeria obtusissima B. & C. is from Pennsylvania.

Scleroderris fuliginosa (Pers.) Karst.

On dead twigs of Salix sp. Bald mountain near Fourth lake, northern Herkimer county. H. D. House, June 27, 1917.

Saccardo's description speaks of the "late ambiente-effuso" subiculum, which is again referred to in the note on character given below the description. Phillips, however, does not mention a subiculum. Otherwise the colors, size and septation of sporidia agree with Karsten's and Saccardo's descriptions.

Septoria coptidis B. & C.

The measurements given in Saccardo (Syll., 3: 526) call for sporules 25 μ long. On leaves of Coptis collected by C. H. Peck at Grassy pond in the Adirondack mountains, the spots and form of spores agree with the description, but the sporules are from 30 to 65 μ long, averaging about 45 μ long. The pycnidia are epiphyllous and from 72 to 125 μ in diameter.

Septoria hedeomae Dearness & House, sp. nov.

Spots brown, darker above, angular or suborbicular, mostly from 2 to 4 mm broad. Pycnidia epiphyllous, numerous, small, 35 to 65 μ in diameter; wall very thin, hardly visible if existent at the summit; sporules continuous, straight or curved, 24 to 33 x 1 μ.

On leaves of Hedeoma pulegioides. Highland Mills, N. Y. C. H. Peck.

The pycnidia on the leaves are much smaller and thinner walled and the sporules shorter and narrower than the corresponding characters of Septoria hedeomina Peck (Rhabdospora hedeomina Sacc.) on dead stems and calyces of the same host. Peck appears to have considered this a mere form of R. hedeomina.

Sphaeropsis ellisii Sacc.

(S. pinastri C. & E.)

On dead limbs and twigs of young white pine (Pinus strobus) which has been copiously channeled by a small beetle belonging to the genus Pityophthorus (det. by Felt). Between Elizabethtown and Keene, Essex county. R. G. Pierce, November 1916.

Sphaeropsis hedericola (Speg.) Sacc.

On languishing leaves of Hedera helix. Yonkers, N. Y. May 8, 1915. H. D. House. Except that it is on leaves instead of stems it also agrees with the description of Sphaeropsis hederae E. & E. and there is reason to believe that the two are synonymous.

Sporodesmium naviculum Dearness & House, sp. nov.

A dark-brown conidial stratum lines the interior of boat-shaped cavities in the decorticated, whitened wood, .7 to 1.25 mm long by .5 mm wide. The presence of the fungus has hindered the weathering of the contiguous wood fibers, leaving the cavity walls or naviculae .2 to .3 mm above the surrounding wood; these are regularly scattered, 5 to 8 to a square centimeter, easily visible by their prominence and color. Conidia at first hyaline, then brown, globular, muriform, 7 to 12 μ in diameter.

On weathered and decorticated wood of Juniperus virginiana. Albany, N. Y. H. D. House, July 1913.

Thyridium antiquum (E. & E.) Sacc.

On dead branches of Vitis. Helderberg mountains, Albany county. C. H. Peck, May.

Tympanis buchsii (Henn.) Rehm.

Biatorellina buchsii Hennings, Hedwigia, 42: 307. 1903.
Tympanis buchsii Rehm, Bayer Bot. Ges., 203. 1912.

On dead limbs of young white pines (Pinus strobus). Paul Smiths, N. Y. Collected by Edward Patnode, November 30, 1916 and communicated by C. H. Pettis, superintendent of state forests. This adds another saprophytic species to the long list of fungi found upon white pine in America.

Tympanis laricina (Fckl.) Sacc.

(T. pinastri *Rehm.*)

On shrunken dead areas of the cortex of living or languishing white pines (Pinus strobus). Between Elizabethtown and Keene, Essex county. R. G. Pierce, November 1916. Apparently secondary and not the cause of the shrunken areas of the cortex, since upon similar areas other species of fungi are frequently found.

Valsa pini (A. & S.) Fr.

On dead limbs of young white pines (Pinus strobus) near Paul Smiths, N. Y. Edward Patnode, November 30, 1916 (communicated by C. R. Pettis, superintendent of state forests). Between Elizabethtown and Keene, Essex county. R. G. Pierce, November 1916. Ithaca, H. H. Whetzel. Elizabethtown, C. H. Peck. North Elba, C. H. Peck. West Albany, C. H. Peck.

Valsa variolaria (Schw.) Cooke

On dead branches of Tilia americana. Hunter and Catskill. C. H. Peck.

Valsaria toxici (Schw.) Sacc.

On dead stems of Rhus radicans. Albany, N. Y. H. D. House, November 27, 1917 and January 18, 1918. Most of the material is the spermogonial and conidial stages and quite variable in the size of spores.

Vermicularia sambucina Ell. & Dearn.

On dead shoots of Sambucus canadensis. Helderberg mountains. C. H. Peck, May. Some of the pycnidia are considerably larger than those described in the type, but otherwise agree well with the type material.

Winterina crustosa E. & E., Sacc.

On decorticated wood. Catskill mountains. C. H. Peck. Some of the perithecia are stellately cleft. [Winteria crustosa E. & E.]

COLLYBIA CAMPANELLA PECK, AND ITS NEAR RELATIVES IN THE EASTERN UNITED STATES

BY GEORGE F. ATKINSON

This interesting species was described by Peck in 1907 (N. Y. Mus. Bul. 116, p. 19) from specimens collected by him on dead twigs of the arbor vitae, or white cedar (Thuja occidentalis) in a swamp at Horicon, Warren county, N. Y. (July 20, 1905). The plants were apparently not fully grown nor quite mature, as spores[1] were not described by Peck. Several collections of the species have since been made on the same host: in Ontario, Canada, March 1906, by C. Guillett, reported as Collybia stipitaria campanulata Peck (name only)[2]; at Houghton, Mich., August 17, 1906, C. H. Kaufmann, no. 522, and by H. D. House in a cedar swamp at Jordanville, Herkimer county, N. Y., June 23, 1917, and at Pecksport, Madison county, July 12, 1918. It was also collected by Doctor Peck on branches of the American yew (Taxus canadensis) at Indian Lake, in July 1901.

In the original description the pileus is described as " conic or campanulate," and all the other collections mentioned above were collected at the same stage of development, except those by House at Jordanville. In this collection nearly all the plants were full grown, the pileus fully expanded, some of the plants being much larger than any in the other collections above referred to, the larger ones reaching 5 cm high, with the pileus 18 mm broad.

It appears that the validity of this species has been questioned in certain quarters. In the North American Flora (9: 374. 1916), Murrill states that it belongs to the genus Crinipellis. Later, in the treatment of Crinipellis, he does not include it as a distinct species, nor does he list the name as a synonym under any of the species recognized from North America. But the description given under Crinipellis scabella appears to be drawn in such terms as to include Collybia campanella.

In view of this situation Doctor House recently sent me all the collections of Collybia campanella and C. stipitaria in the herbarium of the New York State Museum, requesting my opinion and later a critical note on the situation.

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[1] In the examination of the type material I have found a few spores. *G. F. A.*

[2] Ottawa Naturalist, 23: 59-60, 1907.

In order to determine the relation of Collybia campanella to C. stipitaria, it was necessary to have for examination reasonably typical examples of the European C. stipitaria of Fries. The type of Agaricus scabellus[3] (Consp. Fung. 189, pl. 9, fig. 6. 1805) is probably not in existence, and at the present time it is not feasible to attempt to get hold of the type of Agaricus stipitarius Fries (Syst. Myc., 1: 138. 1821) from Upsala, even if that type has been preserved. There are accessible, however, collections which, without any reasonable doubt, may be accepted as typical of Agaricus stipitarius Fries. These were collected by Th. M. Fries (son of Elias Fries) in the region of Upsala, Sweden, on tufts of grasses, September 1859, and distributed in Rabenhorst's Fung. Eur. no. 107 as Agaricus (Collybia) cauticinalis[4] I have examined the specimens of this collection in the Experiment Station herbarium of the Agricultural College at Cornell University.

The following synopsis presents the principal differential characters in a comparison of the two species:

Collybia campanella	**Collybia stipitaria**
Plants reddish brown tawny to mars brown.	Plants white to grayish brown.
Pileus in age not plicate.	Pileus in age more or less plicate.
Lamellae free, narrow, very thin and soft.	Lamellae adnexed to free, broad, ventricose.
Cystidia (sterile cells) on edge of lamellae, cylindrical clavate, straight or flexuose, with 1 to 3 or 4 short or blunt mucros which are themselves sometimes branched, 12 to 25 x 4 to 7 μ.	Cystidia (sterile cells) on edge of lamellae, cylindrical to subfusoid, clustered usually in densely packed tufts, straight or flexuose, simple, 24 to 30 x 3 to 4 μ, inconspicuous or rare on the sides of the lamellae.
Spores 7 to 9 x 3.5 to 4.5 μ.	Spores 7 to 10 x 4 to 6.

This diagnosis warrants the separation of Collybia campanella as distinct from Collybia stipitaria.

Lloyd reports Collybia campanella Peck in 1900 (Mycl. Notes, 5: 43, fig. 16) as Collybia stipitaria var. robusta. The specimens were growing "on fallen cedar limbs in a swamp," probably the white cedar (Thuja occidentalis). They represent the large specimens. He considers his variety as a form of Collybia stipitaria, approaching Collybia zonata,[5] indicating that C. zonata is only a form of C. stipitaria. Although the name, var. robusta, antedates Collybia campanella by seven years, the varietal name can not be used in place of the specific name campanella, according to article 49 of the International Rules of Botanical Nomenclature, 27, 1912.

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[3] According to the International Rules of Botanical Nomenclature, 1912, article 19, f; the species name Agaricus stipitarius Fr. takes precedence over Agaricus scabellus Alb. & Schw.

[4] In Summa Veg. Scand.. 280. 1849, Fries employed Bulliard's name, Agaricus caulicinalis (in DeCandolle Flora Francaise 2: 192. 1805. Champ. France pl. 522, fig. 1. 1790, text page 545. 1809), with a typographical error in the spelling. It is very doubtful if Bulliard's plant is the same as Agaricus stipitarius Fries.

One of the collections received from the State Museum was typical Collybia stipitaria, and is the only typical representative of the species which I have seen in this country. It was collected by E. Bartholomew (no. 2238) and determined by Peck as Collybia stipitaria. The specimens were found growing on grass roots in a sandy pasture, Rooks county, Kansas, August 30, 1896. They agree in all particulars with the specimens in Rab. Fung. Eur. no. 107, referred to above. It is interesting to note that the Kansas specimens were collected on grass roots in an open field. Fries says of Agaricus stipitarius (Epicrisis 87. 1836), that it is abundant on the roots of grasses in fields, but never in woods or mountainous regions.

This raises the question as to the status of the rather common form in the eastern United States, which grows in the woods on twigs and leaves, and which goes quite generally under the name of Collybia stipitaria. Peck's critical mind led him to recognize this form as distinct from the Collybia stipitaria of Europe and he named it Collybia stipitaria var. setipes (38th Rep't N. Y. State Mus., p. 109. 1885). This I regard as a distinct species. The plants are taller and more slender than those of the two species treated above, ranging from 5 to 10 cm high, the pileus 4 to 10 mm broad. The pileus is pale gray to dark gray or umber. The lamellae are narrow adnexed. The cystidia are very characteristic, abundant on the edges of the lamellae and distributed for some distance on the sides, at least half way to the pileus in the specimens examined, but they do not project beyond the basidia. They are clavate with numerous short processes over the distal end (6 to 8 or 10 or more) and are 15 to 20 x 6 to 9 μ. These cystidia are very similar to those present in a number of species of Marasmius. The spores are 7 to 9 x 3 to 4 μ.

There remains to be considered a fourth species, Collybia zonata (Peck) Sacc. This species grows on dead branches, more rarely on leaves or wood mold, the plants are 3 to 8 cm high and the pileus with a spread up to 3 cm. It is umber to seal brown and usually the scales are arranged in prominent concentric zones. The lamellae are adnexed or free and narrow. Cystidia are absent on the sides of the lamellae, but are present on the edges. They are clavate, usually mucronate or abruptly acute, sometimes more or less irregular. They are much larger than the basidia, 30 to 35 x 12 to 15 μ. The spores are oboval, 4 to 6 x 3 to 4.5 μ. The species is very distinct from any of the three treated above.

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[5] Agricus (Collybia) zonata Peck, 24th Rep't N. Y. State Mus., p. 161. 1872.

While these four species are generally placed in the genus Collybia, they are foreign to the general characters of that genus. They are dry and nonputrescent. Two of them Patouillard places in his genus Crinipellis (Ess. Tax. Hym. Eur. 143. 1900), an assignment followed by Murrill (North American Flora, 9: 287. 1915). The chief characteristics of Crinipellis are the nonputrescent nature of the plants, the strigose hairy pileus, and the presence of salient, projecting, fusoid or unimucronate cystidia, that is, projecting beyond the basidia, and presumably on the sides of the lamellae as shown in Patouillard's figure (l.c.) from Crinipellis excentrica. None of the four species mentioned above has projecting cystidia, except Collybia zonata, where they project slightly on the edges of the lamellae. Only one of the species, Collybia setipes, has conspicuous cystidia on the sides of the lamellae, and they are clavate and multimucronate, not salient. The strigose hairy feature ("pellicle") of the pileus is the only character of these four species in which they differ from the usual concept of the genus Marasmius, and a number of students have remarked on the close resemblance of Collybia stipitaria to Marasmius, the nonputrescent nature, coriaceous texture, "inserted" stem, and form of the cystidia or sterile cells, etc.

Crinipellis was proposed by Patouillard (Jour. de Bot., 3: 336, 1 fig. 1889) to include plants with a more or less coriaceous texture like Collybia stipitaria and related species, as well as species of Marasmius having a fibrous pellicle. He later includes sessile species as well as some which had been assigned to Pleurotus and Lentinus (Tax. Hym. 143. 1900). In 1887 (Tab. Anal. Fung. 14. fig. 525) he describes and figures a cystidium in a lamella of Collybia stipitaria of the same size and shape as the basidia except that it tapers to a mucro and slightly projects above the basidia. Some of the sterile cells on the edges of the lamellae are of the same shape but I have not found them on the sides of the lamellae in the material examined.

The fibrous or hairy "pellicle" of the pileus alone does not appear to warrant the recognition of a distinct generic type. Although Murrill (North American Flora, 9: 287. 1915) recognizes the genus Crinipellis, it is evident that he does not consider the hairy "pellicle" in itself an important generic character since he includes plants with the pileus devoid of hairs but covered with spines (Crinipellis echinulata Murr. l. c. 288), a feature conspicuous in a number of species of Marasmius. Furthermore he transfers two of Patouillard's species of Crinipellis (Cr. asperifolia and Cr. calospora) to Pleurotopsis, a section of Marasmius including coriaceous forms which are resupinate when young, but the pileus varying in structure (North American Flora, 9: 238. 1915).

The four species with which we are concerned here seem to belong essentially in Marasmius. The mere fact that the hairs on the pileus are long does not warrant their separation from other coriaceous species with a fibrous "pellicle" such as are known in Marasmius, on the ground of difference in length of hairs alone and therefore the following arrangement is proposed for the species treated here.

Marasmius campanellus (Peck) Atkinson and House, nov. comb. Collybia campanella Peck, N. Y. State Mus., Bul. 116, p. 19. 1907.

Marasmius setipes (Peck) Atkinson and House, nov. com. Collybia stipitaria var. setipes Peck, 38th Rep't N. Y. State Mus., p. 109. 1885.

Marasmius stipitarius (Fries) Atkinson and House, nov. comb. Agaricus (Collybia) stipitarius Fr. Syst. Myc., 1: 138. 1821.

Marasmius zonatus (Peck) Atkinson and House, nov. comb. Agaricus (Collybia) zonatus Peck, 24th Rep't N. Y. State Mus., p. 61. 1872.

THE SPECIES OF PORIA DESCRIBED BY PECK

BY L. O. OVERHOLTS

The genus Poria of the Polyporaceae has long presented to mycologists an unsolved problem. In the broadest sense it includes all resupinate pore fungi, without regard to the color of the fruiting body or spores, the hymenial configuration, or whether annual or perennial. We are more accustomed to think of it, however, as including only those entirely resupinate species which otherwise would be referred either to Polyporus or Fomes as those genera have been limited by the writer within the last few years.

Dr W. A. Murrill of the New York Botanical Garden in 1908 brought together in the North American Flora, descriptions of a considerable number of those Porias with brown context, including a number of species described as new. Unfortunately in several cases the spore characters there recorded have proved to be erroneous. Aside from this publication no attempt has been made in this country at anything approximating a revision or a monograph of the genus in question. It is a problem, moreover, that will require several years of close and patient study before it can be adequately solved. For several years past the writer has paid special attention to this group of fungi, and consequently has accumulated a large assortment of collections, both through his own endeavors and through the sendings of others. Of late, a large amount of time has been spent in painstaking study to determine those characters which in this group of fungi should be regarded as of specific importance. As the work has progressed it has become more and more evident that the number of described species must be materially increased before the end is in sight. Scarcely a single consignment is received from correspondents in which there is not found one or more collections that are apparently sufficiently different from those previously studied to constitute distinct species. From no locality has this been so true as from the far northwest, where extensive collections have been made by Dr J. R. Weir.

In view of these facts it has seemed advisable that the problem be attacked from a slightly different angle. As a consequence, the present paper is offered as a contribution to a better knowledge of the taxonomy of this group of fungi. During his services as State Botanist of New York, Dr C. H. Peck described about twenty species of resupinate pore fungi, now referred, for the most part, to the genus Poria. The first of these was described in 1873. At that time and for many years thereafter mycologists apparently failed to grasp the idea that the higher fungi include a very large and varied assortment of closely related species. As a consequence they were apparently possessed of the idea that superficial characters were sufficient for the determination of species in most if not all cases.

As time has passed the need of microscopic characters in certain groups of fungi has been more and more emphasized until we are in danger of going too far to the other extreme and underemphasizing the importance of external form, coloration etc. In an effort to overcome the former of these tendencies the writer has undertaken a thorough investigation of the material left by Peck as representing the species he described. It has not been the writer's intention to pass judgment on the validity of these species but merely to supplement Peck's often meager descriptions with addiditional facts concerning characteristics not recognized by him.

The need of such a paper will be appreciated by those who have tried to fit their collections to the descriptions left by Peck. In some instances his description occupies less than three lines of printed matter. Most of them contain no mention of spores or other hymenial structures and these are often among the most useful characters that a plant will show. In preparing the paper it has been necessary to decide to what extent detail is necessary, and where general statements will suffice. In this the writer has been guided by his own experience in matching collections in the herbarium. Characters which have proved useless have been omitted. For example, it has been deemed unnecessary to state the thickness of the subiculum in microns when millimeters or fractions thereof will suffice. Neither is the thickness of the dissepiments nor the diameter of the tubes given in microns. The former is too much a question of age and maturity and is covered in sufficient detail in the statements regarding the size of the tubes in millimeters. It is possible, however, that forty years hence the descriptions here presented by the writer will be deemed as inadequate as are at the present time those published by workers forty years ago.

The presentation of each species conveniently divides itself into four sections.

1 Peck's description is reproduced exactly as it was published and is headed *Original description.* The reason for this is two-

fold. First, it brings together in one paper all of Peck's descriptions of Porias — a convenience that will be appreciated by those who have had to turn from one report to another to locate them. Second, it enables the student to see at a glance what in this paper has been added to each of Peck's descriptions.

2 A section has been headed *Notes* and contains a more extended account of the present condition of the type collection, characters not included by Peck, explanation of discrepancies of one form or another where such occur, and observations on the distinguishing characteristics and probable relationships of the species.

3 The characters brought out in the two preceding sections are combined into a technical *Redescription*. This of course, involves repetition, but it puts into a paragraph a concise description of each species and makes it available for future use.

4 Each species is illustrated as fully as material permits. Three types of illustrations are used. (*a*) Natural size photographs (unless otherwise noted) of at least a part of the material in the type collection. Where possible this material was chosen so as to show as wide a range as possible in the variations of the species. In some instances material is extremely scanty and the results more or less unsatisfactory. (*b*) Microphotographs of sections through the hymenium of each species. Wherever possible these are from cross-section preparations but in a few cases the tubes were so short that vertical sections were resorted to. In passing judgment on these microphotographs it should be borne in mind that they are from free-hand sections, made by the writer, and cut and mounted as described in a previous paper (Ann. Missouri Botanical Garden, 2: 676. 1915), but stained in a 1 per cent solution of water eosin. The mounts were made in 66 per cent glycerine to which a few drops of a 10 per cent solution of acetic acid had been added. The acid prevents the glycerine from extracting the stain from the sections. It should also be remembered that the dried material from which these sections are made has been in the herbarium for as many as forty years in some cases, and moreover that in some cases type material is extremely scanty and is too valuable to be diminished to any extent by continued sectioning in an attempt to obtain a section of extreme thinness. It is hoped, however, that these sections will show in a suitable manner the relative size of the pores, the relative compactness of the dissepiments, and the cystidia, where such are present. These photographs are all magnified to the same extent, namely, about 160 diameters unless otherwise indicated, and consequently are directly comparable

one with another. (*c*) Line drawings of spores and hyphae made with the aid of a camera-lucida, and consequently comparable with one another in point of magnification. Special attention has been directed to the diameters of the hyphae, the presence or absence of clamp connections, the character of the branching if present, and the presence or absence of cross walls. Just how many of these points will eventually prove to have diagnostic value is not known at present. Unless otherwise stated, the hyphal characters given apply to those of both the trama (dissepiments) and of the subiculum. They have been obtained from teased preparations as described in the earlier article referred to.

A word of explanation may not be amiss regarding the writer's use of the terms *trama, dissepiments* and *subiculum.* The first two terms are used nearly synonymously but a more or less superficial shade of meaning has been maintained. The walls of the tubes, at the surface of the hymenium (that is, at the mouths of the tubes) are designated as the dissepiments as they are seen with the naked eye or by the use of a hand lens. Thus one speaks of the comparative thickness or thinness, the color, or the pubescence of these dissepiments. The interior of these dissepiments is designated trama, and of course its structure is invisible except under the microscope. Thus the writer speaks of the characteristics of the hyphae of the trama, meaning those hyphae (exclusive of basidia, paraphyses or cystidia) of which the dissepiments are composed and from which the hymenial elements are produced. The term subiculum is used to designate that layer of hyphae from which the tubes arise. There may thus be a subiculum before the tubes are produced, and in most cases it persists after they are well formed, as a thin layer separating the tubes from the substratum.

The color terms used in the writer's *Notes* and *Redescriptions* of the various species (except where credited to Peck) are those of Ridgway's Color Standards and Color Nomenclature, 1912 edition. In order to follow closely the exact shade of meaning of the various terms used access to a copy of this book is a necessity. In determining the colors shown by these fungi at present it is well to bear in mind that specimens mounted on a herbarium sheet (as many of Peck's types are) present a serious obstacle which may express itself in discrepancies in applying the color terms of the manual. This is because it is impossible to bring into close proximity a given specimen on such a sheet and the representation of any particular color shown in the book. Even if determined accurately, the possibility of considerable color variation in the plants on drying is not excluded. It is often possible to take a herbarium specimen, wet it in water and dry it out again, and have it present quite a different shade of color from the one it first possessed.

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Poria attenuata (Peck) Cooke

Plate 1, figures 1–6; plate 2, figures 1–2

Grevillea, 14: 110. 1886.

Polyporus attenuatus Peck, Buffalo Soc. Nat. Sci. Bul. 1, p. 61. 1873. 26th Rep't N. Y. State Mus., p. 70. 1874.

Original description. Resupinate, effused, very thin, separable from the matrix, pinkish-ochre, the margin whitish; pores minute. subrotund, with thin acute dissepiments.

Prostrate trunks of deciduous trees. Croghan. September.

The pores are scarcely visible to the naked eye.

Notes. This is the first species of Poria described by Peck, and the description is extremely meager. Fortunately, the species is rather common in the eastern United States and its characters easily recognized. The type collection is quite small, consisting of only four small fragments less than 6 cm long and 2 cm broad. One of these is reproduced in plate 1, figure 7. These specimens do not have the exact coloration typical of most collections seen by the writer, but all are alike in microscopic structure.

The plants are annual, thin, and separate rather easily from the substratum. The color of the hymenial surface of the type collection is near vinaceous buff or avellaneous. In other collections, however, the color is light pinkish cinnamon to light ochraceous salmon. Sometimes darker colors, approaching cinnamon, are met with. In one especially light-colored collection made by the writer the hymenium when fresh was light buff or cream color. In all cases the fructifications are surrounded, at least in part, by a narrow, white, finely pubescent or nearly glabrous margin, less than

1 millimeter broad, as shown in plate 1, figure 1. This margin is fairly regular, and not fimbriate. The thickness of the hymenium-producing region in dried plants is about half a millimeter in the types but in other collections as much as 3 mm. This thickness is made up of a very thin but conspicuous subiculum and the rather short tubes. The mouths of the tubes are angular or subangular and with a diameter of 5 to 6 to the millimeter. The dissepiments are rather thin but remarkably entire. The hymenium often and perhaps typically shows a decided silky luster when viewed in oblique positions.

The spores are ellipsoidal or inclined to elliptical and hyaline (plate 1, figure 2). They are 3 to 4 μ long and 2 to 3 μ broad. There are many conspicuous encrusted cystidia in the hymenium, but in some collections they appear to remain embedded in the tramal tissue and not project beyond the basidia. In other collections they project very conspicuously (plate 2, figure 1a) and usually obliquely into the lumen of the tubes. They are best seen in vertical sections of the hymenium as shown in plate 2, figure 2. In cross sections they are often to be identified only by their cross section views (plate 2, figure 1-b) as even where they do project into the tubes they do so obliquely and so are cut crosswise in such sections. In macerated or teased preparations their true nature is easily made out. They are simply the enlarged and encrusted ends of ordinary hyphae as shown in plate 1, figures 3 and 4. They measure 60 to 80 μ in length and are 7.5 to 10 μ thick. The hyphae of the trama and the subiculum are rather compactly arranged, and are colorless, only rarely branched, sometimes quite flexuous though ordinarily only moderately so, and no cross walls are visible. They vary in diameter from 2 to 4 μ. There are no clamp connections (plate 1, figures 5 and 6).

Lloyd has stated (Mycological Notes, 2: 374. 1908) that this species is the same as Poria eupora Karsten. From unauthenticated specimens I have seen I am of the same opinion. Also P. nitidus A. & S. (ex Egeland, Norsk. Res. Poresv. p. 151) is apparently a closely related species. Poria myceliosa and Poria fimbriatella, both described by Peck, are somewhat similar but of different coloration and with smaller spores. Also the former species is without cystidia and has distinct cross walls and clamp connections in the hyphae.

Poria attenuata appears to be quite frequent in the eastern United States, but among a large series of western collections from various localities and different collectors this fungus has not been found. It is known to grow on witch hazel, oak, maple, and alder, and S. H. Burnham says he finds it frequently in New York on basswood and ironwood. Several collections were made by the writer in New Hampshire in the summer of 1918. Its decaying effect seems to be very slow and long drawn out.

Redescription. Effused for several centimeters on wood or bark, annual, separable, thin (less than 1mm), more or less surrounded by a thin, narrow, white, slightly pubescent border not more than 1 mm broad; subiculum thin but conspicuous, light colored; tubes less than .5 mm long in dried plants, their mouths pinkish ochre (fide Peck) to light buff, light pinkish cinnamon, or light ochraceous salmon when fresh, not much changed on drying though sometimes inclining to cinnamon, usually glistening, more or less angular, thin walled but entire, averaging 5 to 6 to a millimeter; spores ellipsoidal or slightly elliptical, hyaline, 3 to 4 x 2 to 3 μ; cystidia abundant, sometimes mostly embedded but more often conspicuously and obliquely projecting, hyaline, encrusted, 60 to 80 x 7.5 to 10 μ; trama and subiculum compact, of hyaline, thin-walled, nearly simple hyphae, 2 to 4 μ in diameter, apparently without cross walls; clamp connections lacking.

On dead wood and bark of deciduous trees.

Type locality: Croghan, N. Y. C. H. Peck. Rather widely distributed through the eastern states as far west as Missouri.

Poria attenuata var. **subincarnata** Peck

Plate 2, figures 3–6

48th Rep't N. Y. State Mus., p. 118 (Bot. ed. 20). 1896.

Original description. This differs from the typical form in the paler color of the pores. It grows on hemlock bark and forms small patches rarely more than 1 inch in diameter. N. Y. Sept. Shear.

Notes. This, originally described as a variety of Poria attenuata, is a distinct species. It has little resemblance to that species except in its thickness and in the size of the pores. It grew on the bark of hemlock, while the typical species, so far as known, is confined to deciduous wood. Its color is considerably different from that species, and the spores (plate 2, figure 4) are allantoid, while those of the species are ellipsoidal. In some respects it is similar to resupinate forms of Polyporus semipileatus Peck, but appears to differ somewhat from that species. The writer is certain that the plant is not a variety of Poria attenuata, but is not ready to suggest any other disposition of it at present. The type collection contains but a few small fragments of the plant (plate 2, figure 3). An excellent collection of this plant was obtained by the writer in New Hampshire in 1918.

Redescription. Effused, annual, probably separable, with a narrow, white, pubescent margin about .5 mm broad; subiculum extremely thin, whitish; tubes less than .5 mm long, their mouths light buff to tilleul buff at present, apparently somewhat incarnate when fresh, subangular, rather thin-walled, averaging 5 to 6 to the millimeter, entire, or gaping in oblique situations, the hymenium considerably cracked when dry; spores allantoid, hyaline, 4 to 5 x 1 μ; cystidia none, but large subcylindrical pegs of hyphae project at irregular intervals into the lumen of the tubes; trama and subiculum compact, of hyaline, thin-walled hyphae 2 to 3.5 μ in diameter, rarely branched, some heavily encrusted with coarse crystals but mostly smooth; cross walls not conspicuous and in many hyphae apparently lacking; clamp connections lacking.

On fallen branches of Tsuga canadensis.

Type locality: Alcove, N. Y., C. L. Shear. Also in New Hampshire.

Poria aurea Peck

Plate 3, figures 1–4; plate 4, figures 1–2

43d Rep't N. Y. State Mus., p. 21. 1890.

Original description. Effused, forming patches of several inches in extent, 2 to 3 lines thick, separable from the matrix, golden yellow; subiculum thin, subgelatinous, the young margin byssoid or fimbriate, greenish yellow, soon disappearing; pores small, subrotund, elongated, the dissepiments thin, rather soft; spores minute, subelliptical, .00016 to .0002 in. long .0008 to .00012 broad.

Decaying wood of maple, Acer saccharinum. Sevey.

Apparently closely related to Poria xantha, but separable from the matrix and remarkable for its somewhat gelatinous subiculum. It is an attractive species.

Notes. Considerable confusion exists as to this species. The herbarium sheet at Albany contains three different collections. The specimens marked types are four in number. According to the original description, the type collection was made at Sevey, N. Y., in July, from the wood of Acer saccharinum, and the single label on the herbarium sheet records that as the substratum. But the other two collections are both from wood of coniferous trees and one of them agrees in all respects with the specimens on

Acer. This one was collected on pine wood at Ithaca, N. Y., by G. F. Atkinson and is referred to by Peck in Report 51 : 299. 1898. The other collection is from pine bark and is quite different, agreeing very well with specimens of Poria subacida. There is also one collection in a herbarium box, from C. H. Fairman, Lyndonville, N. Y., on hemlock, October 1910, referred by Peck as " Poria aurea — Myriadoporus form." These specimens do not agree with the types and are not considered as that species. Several facts warrant the conclusion that the specimens from Acer should be regarded as the types. Among these may be mentioned the fact that in the original description, Sevey is given as the type locality and this locality was evidently the one first written on the herbarium label. The locality of the Ithaca collection evidently was noted at another time and perhaps by a different person, as the handwriting seems different. No locality is given for the collection from pine bark. The speciments on Acer are distinct from any other of Peck's species and are different from any species known to the writer.

The largest specimen is 10 cm long and 4 cm broad but is incomplete. The color of the hymenial surface in these specimens is between cartridge-buff and honey yellow. Mature specimens have no sterile margin but more immature ones sometimes have a very narrow white margin which is not, however, uniformly sterile. It is not at all fimbriate. The thickness of the hymenium-producing portion is 2 to 5 mm in mature specimens. Of this thickness practically all is made up of tubes, as little or no subiculum is present. The mouths of the tubes are angular and where best developed average 2 to 3 to a millimeter. The dissepiments are very thin but entire except when growing in oblique positions. In dried specimens they are quite fragile. The best developed specimen has a silky luster over the hymenium.

The spores of this species are oblong or short-cylindrical and with an oblique apiculus (plate 3, figure 2). The other end of the spore is more or less rounded. They are colorless, smooth, measure 5.5 to 7.5 μ in length and 2.5 to 3.5 μ in breadth. It will be noted that these spore characters are different from those assigned to the species by Peck. Those given here, however, are from the specimens on Acer. Peck's measurements agree with those of the spores from the specimens on pine bark, and they agree with those of Poria subacida. Abundant cystidia are present in the hymenium (plate 4, figure 1–2). They are large, hyaline structures often slightly encrusted at the apex, and quite variable in size and shape. They project conspicuously from between the basidia. Usually the apex is more or less pointed and they are largest at or just above the center. A peculiar feature of these structures is that they are apparently formed by several hyphal fusions. In crushed preparations of the hymenium as many as five or six hyphae go off from the base of these bodies (plate 3, figure 3). More rarely they appear to be the enlarged end of a single normal hypha. The tramal and subiculum hyphae are rather compactly arranged, are colorless, 2 to 3 μ in diameter, and with clamp connections and cross walls (plate 3, figure 4). The clamps are of a more semicircular outline than those of most species of fungi. On account of the small size of the hyphae they are somewhat difficult to locate at first. The size of the hyphae and the presence of connections, are other important points separating the specimens on Acer (types) from those on pine bark.

The affinities of the species are not clear. The general appearance is somewhat that of forms of Poria subacida or related species, but it differs in the more yellow color when fresh, the different spores, the presence of conspicuous cystidia, the diameter of the hyphae, the presence of clamp connections, etc. It probably belongs to a different group of species. In the several hundred collections of Poria thus far examined by the writer, none with this combination of characters has been found.

Not much can be stated regarding the decay produced by this species. The Acer substratum has been reduced to a friable cinnamon-colored mass that readily breaks up into small flakes. The decay in the coniferous substratum is more brown in color and can be powdered more easily.

Redescription. Annual, effused up to lengths of 10 cm or more, separable when fresh (fide Peck), with a fimbriate, byssoid margin (fide Peck) when young, this more or less disappearing in mature specimens, greenish yellow in color (fide Peck); subiculum thin and subgelatinous (fide Peck) in fresh specimens, practically obsolete when dry; tubes 2 to 5 mm long, their mouths golden yellow (fide Peck) when fresh, between cartridge-buff and honey yellow in herbarium specimens, angular when mature, thin-walled, entire, averaging 2.5 to 5 to a millimeter; spores oblong or short cylindric, rounded at apex, obliquely apiculate at base, smooth, hyaline 5.5 to 7.5 x 2.5 to 3.5 μ; basidia 3 to 4.5 μ in diameter; hyphae hyaline, branched, 2 to 3 μ in diameter; clamp connections and cross walls present.

On wood of both deciduous and coniferous trees.

Type locality: Sevey, N. Y. C. H. Peck. Also from Ithaca, N. Y., by G. F. Atkinson. Not otherwise known to the writer.

Daedalea extensa Peck

44th Rep't N. Y. State Mus., p. 21. 1891.

Original description. Resupinate, thick, coriaceous, often uneven or somewhat nodulose, the margin at first cottony and white, soon changing to brown, the subiculum slightly rufescent; pores large, unequal and labyrinthiform, in vertical places oblique, whitish; spores minute, oblong, .00024 to .0003 in. long, .0001 to .00012 broad.

Prostrate trunks of deciduous trees. Salamanca. September.

This forms patches two feet or more in length on the sides and lower surface of the trunk. It follows the inequalities of the surface, and in vertical places it becomes more or less nodulose or develops a thick obtuse margin, which is velvety-tomentose and at length dark-brown in color, but I have seen no reflexed margin. It is very suggestive of resupinate forms of Trametes mollis, but differs from it in the character of the pores, in the thicker subiculum and in the absence of any free margin.

Note. According to Dr H. D. House, nothing is left of the type collection of this species except a few wood fragments with very slight indications of a fungous mycelium. It is quite probable that the species will never be recognized from the above description alone. The description reads somewhat like one of the resupinate forms of Trametes serialis Fries, in which the hymenium had become lacerated and torn. The writer has seen from one of the New England states (New Hampshire) specimens of Trametes mollis B. & C. that would also answer the description fairly well.

Poria fimbriatella (Peck) Sacc.

Plate 4, figure 3; plate 5, figures 1–7; plate 22, figure 6

Syll. Fung. 6: 303. 1888.

Polyporus (Physisporus) fimbriatellus Peck, 38th Rep't N. Y. State Mus., p. 91. 1885.

Original description. Widely effused, thin, tenacious, separable from the matrix, with a thin white fimbriate margin and a white subiculum, running into rhizomorphoid branching strings of mycelium or forming a somewhat reticulated fimbriate membrane; pores minute, subrotund, equal, whitish inclining to cream color.

Under side of prostrate trunks of maple, forming extensive patches on the wood and bark. Osceola. Aug.

By its rhizomorphoid mycelium this species is related to Poria vaillantii, but the pores are smaller and not collected in heaps as in that species. By reason of its tenacious substance it is readily separable even from an irregular matrix.

Notes. With this species a question arises as to what shall be considered the type material. The herbarium sheet contains what are undoubtedly parts of two separate collections, and there is some doubt as to the identity of the two collections. One set of specimens (plate 22, figure 6) has nearly entire tube mouths and few mycelial strands and is undoubtedly from the type collection. The other set of specimens (plate 4, figure 3) has a more lacerated hymenium and better developed mycelial strands. When touched with a drop of KOH solution the former at once becomes black while the latter does not change color. There is also in the herbarium a collection in a small box that agrees exactly with the second set of specimens on the herbarium sheet, and undoubtedly those specimens were taken from this box (or collection) and mounted on the sheet. This collection, according to the label on the box, was made at Ampersand pond by Peck in September, and was taken from a maple substratum. The first collection is from Osceola and also on the prostrate trunk of maple. Undoubtedly the Osceola specimens are the types and are so regarded here. In internal structure the two collections are alike. The only differences in external appearance are the more lacerated hymenium, better development of mycelial strands, and the lack of color change in KOH for the Ampersand collection.

The specimens are rather irregular in shape and vary in size from 1.5 to 7 cm broad and 6 to 15 cm long. The color of the hymenial surface varies from cinnamon buff to warm buff or somewhat light ochraceous buff. Sometimes a very narrow, white, subfimbriate margin is present, but more often the entire margin is fertile. In either case small white rhizomorphic strands less than one-fourth of a millimeter in diameter may be present, but in some specimens they are absent. The thickness of the hymenium-producing portion varies up to 2 mm. Of this practically all is tube length, as the white subiculum is extremely thin. The mouths of the tubes when entire are more or less angular, and average 4 to 5 to a millimeter. The dissepiments are rather thin and, especially in one set of specimens, soon become much torn and lacerated so that the hymenium at times comes to have somewhat the appearance of specimens of Hydnum ochraceum (plate 4, figure 3), although the color is not quite so deep. In some specimens there is a very slight sheen or silkiness to the surface of the hymenium.

The spores are the exact counterparts of those of Poria myceliosa, except that they are slightly smaller. When seen on basidia before maturity they appear more or less globose. When mature they are ellipsoidal, hyaline, and measure 2 to 3 μ in length and about 1.5 μ in breadth (plate 5, figure 7). The basidia are rather small, never exceeding 3 μ in diameter. There are abundant cystidia in the hymenium. These project prominently into the lumen of the tube (plate 5, figures 1 and 2). At times they appear to be associated in small groups on certain walls of the tubes, but at other times they are evenly distributed. They are hyaline and rather heavily encrusted with small crystals. Their shape can best be made out by reference to the illustration on plate 5 (figures 2, 5 and 6). Sometimes they are shap pointed and at other times more blunt on the apex. They are 10 to 15 μ in diameter at the thickest points and project 10 to 30 μ beyond the basidia. A much greater length is embedded in the tramal tissue, however, so that the total length may reach 50 μ or more. The embedded portion is usually free from crystals and appears as a large, thick-walled, hyphalike structure. These cystidia are very much alike in both sets of specimens on the herbarium sheet, though in KOH solution those found in the one set are brownish in color.

The hyphae of the subiculum are colorless and practically simple, and no cross walls or clamp connections are apparent (plate 5, figure 4). Their diameter is 2 to 4 μ. Those of the trama are somewhat smaller, somewhat more branched and more flexuous, with a diameter of 1.5 to 3 μ (plate 5, figure 3). They are practically the same in both sets of specimens on the herbarium sheet.

The relationships of this species are clearly those of Poria myceliosa. The chief point of difference having diagnostic value is the presence of cystidia in the former species and the absence of cross walls and clamp connections. Another fact that may be of some significance is that Poria myceliosa has been collected only on the wood of coniferous trees while Poria fimbriatella is known only from the wood of deciduous trees. The length of the tubes in Poria fimbriatella is somewhat greater and their diameter somewhat less than in the other species, but in general coloration, rhizomorphic mycelial strands, and spores, the two are alike.

Specimens referred by the writer to Poria vaillantii (DC.) Fries, differ in the nearly pure white color and the larger spores.

The collections available for examination are not attached to the substratum and consequently give no idea of the nature of the decay produced. Both collections are said by Peck to be on maple wood. The data at present on the type collections does not cover this point.

Redescription. Effused, 6 to 15 cm long, 1.5 to 7 cm broad, separable, with or without a narrow (1 to 3 mm), white, subfimbriate margin, often with small white rhizomorphic strands; subiculum exceedingly thin, white, scarcely discernible in mature specimens; tubes sometimes nearly 2 mm long but often shorter, their mouths whitish inclining to cream color (when fresh ?, fide Peck), cinnamon buff to warm buff or light ochraceous buff in herbarium specimens, more or less angular, with rather thin dissepiments, sometimes lacerated and the hymenium somewhat irpiciform, averaging 4 to 5 to a millimeter; spores ellipsoidal, smooth, hyaline, minute, 2.5 to 3.5 x 2 μ; basidia 2.5 to 3 μ in diameter; cystidia abundant, 10 to 15 μ in diameter at the thickest part, projecting prominently for 10 to 30 μ, the tips pointed and encrusted with coarse granules, the base embedded in the trama and unencrusted; tramal tissue fairly compact, composed of thin-walled, colorless, somewhat branched hyphae, 2 to 3.5 μ in diameter; subiculum hyphae nearly simple, 2 to 4 μ in diameter; clamp connections lacking; cross walls invisible.

On prostrate trunks of maple.

Type locality: Osceola, N. Y. C. H. Peck. Also collected at Ampersand pond, N. Y., on maple trunk. C. H. Peck. Not otherwise known to the writer.

Poria griseoabla (Peck) Sacc.

Plate 5, figure 8; plate 6, figures 1-5

Syll. Fung. 6: 306. 1888.

Polyporus (Physisporus) griseo-albus Peck, 38th Rep't N. Y. State Mus., p. 91. 1885.

Original description. Effused, thin, tender, adnate, uneven, scarcely margined, indeterminate, grayish-white, with a thin pulverulent subiculum; pores very minute, subrotund, often oblique.

Soft decaying wood of deciduous trees. Osceola. July.

The pores are sometimes collected in little heaps or tubercles as in P. molluscus and P. vaillantii. In the dried state they are slightly tinged with creamy yellow.

Notes. This is one of the earlier species of Poria described by Peck, and the description is entirely inadequate for the recognition of the species. The type collection is rather scanty, consisting of about eight small fragments of the substratum, the largest of which is only 4 cm in diameter. This larger fragment is fairly well covered by the fungus (plate 5, figure 8), but the others bear only small scattered fructifications, the diameter of which may not exceed 5 mm. In other words, the fungus varies in size from 5 mm to about 4 cm broad. The color of the hymenial surface varies from pale smoke gray to pinkish buff or cinnamon buff. The subiculum is fertile to the margin. The margin is not fimbriate and there are no rhizomorphic strands. The fructification is extremely thin, not more than one-fourth of a millimeter thick, and no subiculum is discernible except with a hand lens. The tubes are extremely short. Their mouths are nearly circular in outline and average 4 to 6 to a millimeter. In the thinner parts of the subiculum these tubes appear as small holes entirely through the fructification. The dissepiments are rather thin but entire. There is no sheen or silkiness to the hymenium.

The spores are oblong or short-cylindrical, sometimes curved, and sometimes pointed at the base. They are colorless, smooth, and measure 4 to 5 μ in length and 1 to 2 μ in breadth (plate 6, figure 5). They are thus of a somewhat different type from the small, allantoid spores such as are found in Poria odora and are characteristic of such species of Polyporus as the Polyporus versicolor and P. chioneus group. The basidia are 2 to 3 μ in diameter. Their origin is at times rather peculiar and unlike that of any other species known to the writer. Instead of the basidium arising terminally from more or less elongated hyphal branches, they here often arise in a series of as many as ten or even more from *one side* of a hypha in the hymenial region, as shown in the illustration (plate 6, figure 2). Usually, or perhaps always, the end of the hypha is broken up into a number of short cells each of which gives rise to a basidium, though this fact could not be determined in all cases. In many cases the basidium is cut off from its basal cell by a cross wall, though this was not always evident. This manner of origin of the basidia is frequently seen in crushed preparations of the hymenium, and in several cases spores were seen attached to these basidia. In other cases, however, hyphae were seen to give off a number of upright branches, closely arranged, and each terminating in a basidium. The tramal and subiculum tissue is fairly compact and is made up of hyphae that vary considerably in size. Some are 5 to 7.5 μ in diameter and composed of short cells 25 to 50 μ long (plate 6, figure 1, 3). For the most part they are slightly encrusted with small scattered crystals. Other hyphae, especially in the trama, are considerably smaller, with a diameter of 2.5 to 5 μ (plate 6, figure 2). Hyphal fusions are common in hyphae of both sizes. There are no cystidia in the hymenium. No clamp connections have been observed.

The species is quite distinct from any other of Peck's species in the very thin fructification, and the presence of the large hyphae, sparingly encrusted and composed of short, loosely joined cells.

The specimens are from very rotten spruce wood and nothing can be determined as to the type of decay produced.

Redescription. Annual, not widely effused, .5 to 4 cm in diameter, inseparable (fide Peck, though with appearance as if it might be separable), fertile to the margin; subiculum not visible in herbarium specimens; tubes less than .25 mm long, their mouths grayish white (fide Peck) in fresh specimens, pale smoke gray to pinkish buff or cinnamon buff in herbarium specimens, circular, thin-walled, entire, averaging 4 to 6 to a millimeter; spores hyaline, oblong or short cylindrical, sometimes curved, often pointed at the base, 4 to 5 x 1 to 2 μ; basidia 2 to 3 μ in diameter; tramal and subiculum tissue compact, some hyphae 5 to 7.5 μ in diameter and of short cells 25 to 50 μ long, others 2.5 to 5 μ in diameter and of longer cells, both kinds much branched, frequently anastomosing, and usually slightly encrusted with a few scattered crystals; clamp connections absent.

On well-rotted wood of deciduous trees.

Type locality: Osceola, N. Y. C. H. Peck. Not otherwise known to the writer.

Poria indurata (Peck) Cooke

Plate 6, figures 6–7; plate 7, figures 1–3

Grevillea, 14:115. 1886.

Polyporus (Resupinati) induratus Peck, 31st Rep't N. Y. State Mus., p. 37. 1879.

Myriadoporus induratus Peck, Torrey Club Bul. 11, p. 27. 1884.

Original description. Effused, hard, determinate, 1″–2″ thick, inseparable from the matrix, almost wholly composed of minute, subrotund vesicular pores, yellowish or pale-ochre, the surface slightly pruinose and tinged with flesh color; the yellowish mycelium or subiculum penetrating the matrix.

Decaying wood. Oneida. H. A. Warne.

This species is remarkable for the peculiar character of the pores which form little cells or cavities instead of tubes, so that in whatever direction the mass is cut or broken, the section appears equally porous. Perhaps this character will necessitate the formation of a new genus.

Notes. This plant was originally placed in the genus Polyporus but was later transferred to Myriadoporus, a genus erected by Peck to receive what are now believed to be abnormal forms of other species, differing from well-developed specimens in having a cellular, hymenial surface that is usually sterile. In such specimens both vertical and cross sections of the hymenial region show distinct pores or cavities.

The writer does not believe that the present species deserves specific rank because of its apparent abnormality. But the absence of a hymenium is more or less of a barrier to deciding of what species it is an abnormal form. Nevertheless, others may not agree with the writer, and hence a description is here appended, based entirely on the type collection.

There are mounted on the type sheet at Albany five small specimens of the fungus, the largest of which is only about 3 cm long. The specimens are annual and belong to the white group of Poria (plate 6, figure 6). At present the hymenial surface is avellaneous or vinaceous buff or verging toward pinkish cinnamon. The margin is abrupt, rather thick, and nearly or entirely fertile. The thickness of the hymenium-producing portion is 3 to 6 mm, of which the subiculum is a rather thin and inconspicuous part. The cellular hymenium is 2 to 5 mm thick, but the tubes are not continuous in any one direction. At whatever angle the hymenium is cut they appear as small rounded holes, averaging 5 or 6 to a millimeter (plate 7, figure 3).

The type material is sterile, and for the most part does not contain either basidia, cystidia or paraphyses (plate 7, figures 1 and 2). The trama is very compact and made up of thick-walled hyphae which in cross section give a firm pseudo-parenchymatous appearance to the trama (plate 7, figure 2). When teased out the hyphae are seen to be hyaline, mostly simple, and with few apparent cross walls. Their thickness is 5 to 7.5 μ, and the walls are often as much as 2 μ thick (plate 6, figure 7).

As stated above, the affinities of this plant are in doubt and it is a question whether or not such undoubted abnormal forms are worth consideration. It might be pointed out, however, that Fomes connatus has the same type of trama with smaller heavy walled hyphae as in this plant, as has also the plant heretofore referred by the writer to Polyporus rigidus Lev. A technical description is omitted.

Poria laetifica (Peck) Sacc.

Plate 7, figures 4, 6; plate 8, figures 1–2

Syll. Fung. 6: 300. 1888.

Polyporus (Physisporus) laetificus Peck, 38th Rep't N. Y. State Mus., p. 91. 1885.

Original description. Effused, thin, tender, not readily separable from the matrix, bright orange with a subtomentose yellowish margin; tubes short, often oblique, minute, subrotund, the dissepiments thick, obtuse.

Decaying wood. South Ballston. Aug.

The fungus forms patches 2 or 3 in. long, following the inequalities of the surface. In the dried state the pores appear like little ruptured vesicles as in P. vesiculosus B. & C. The species appears to approach P. fulgens, Rost.; which has the margin white fibrillose and the pores acute.

Notes. From the standpoint of the type collection this is one of the most unsatisfactory of Peck's species of Poria. Not only is the type material scanty but it is also sterile. It is therefore almost impossible to match collections with the type with absolute certainty. Consequently others may not agree with the writer in the application of Peck's name. But the writer has in his herbarium three collections from Pennsylvania that appear to agree in all respects with the type fragments. Notes were made on these in the fresh condition and these notes agree with Peck's brief description. The dried plants have a peculiar appearance to the hymenium and that also is found on my specimens. Consequently I have taken my specimens as representative of the species. Specimens have been deposited in the state herbarium at Albany and so are available for comparison with the types. These specimens are fertile as noted below. But in order to differentiate sharply between the type collection and my own specimens the following notes *are based* on *the former only* and the technical description at the end includes additional notes from my own collections.

The type collection was at first apparently on three pieces of wood, one of which was broken into three parts and mounted on a herbarium sheet (plate 8, figure 1), while the two remaining pieces were preserved in a paper packet. The largest piece of wood is about 7 cm long and 3 cm wide and about two-thirds of its area is occupied by the fungus. The color of the hymenial surface was at first bright orange (fide Peck), but on drying has become nearly hazel or cocoa brown, and another part (probably bruised when fresh) has become seal brown or aniline black. These areas are partly surrounded by a sterile, appressed-tomentose margin now cinnamon buff in color. The hymenium-producing region is less than one-half of a millimeter thick. Of this thickness nearly all is composed of tube length. From the consistency of the fructification one would not judge that the species is perennial. The fungus grew obliquely, however, and in sections taken across the tubes (hence perpendicular to the substratum) there are present many tubes (cut in cross section) completely filled with mycelium, while the ones toward the outside are free from mycelium as though they were the product of the current season's growth. Where best developed the pores average 4 to 6 to a millimeter and are subrotund with rather thick walls. Over most of the surface, however, they have an abnormal appearance " like little ruptured vesicles," as Peck states. There is no sheen or silkiness to the hymenium.

Sections of the hymenium where best developed show no spores although the basidia are present (plate 8, figure 2). No cystidia were found. The trama and the subiculum are quite compact and composed of branched hyphae very frequently more or less encrusted with small crystals (plate 7, figure 5). At present most of these hyphae are colorless but the tips are frequently filled with a brown substance which in the hymenium probably gives color to the fructification. The hyphae are 2 to 4 μ in diameter. Cross walls are visible but usually not conspicuous and often are obscured by the crystals. No clamp connections are present.

The type collection was taken from the well-decayed wood of a coniferous tree but the wood fragments adhering to the specimens are too much decayed to admit of its further identification.

The type locality is South Ballston, N. Y.

In the following description notes from recent Pennsylvania collections are also included, consequently the description is the writer's interpretation of Poria laetifica. Specimens of these collections have been deposited in the herbarium at Albany for reference.

Redescription. Widely effused, annual, separable, as much as 10 cm broad and long, 1 to 3 mm thick in fresh specimens, 1 to 2 mm thick when dry, surrounded by a warm buff to ochraceous buff, sterile, compactly tomentose margin; subiculum thin but conspicuous even in dried plants, light colored; tubes .5 to 1.5 mm long when fresh, not more than 1 mm long when dry, their mouths orange buff to ochraceous orange when fresh, dark red or blood red where bruised, orange cinnamon to hazel or often seal brown when dry, subrounded, averaging 4 to 6 to a millimeter when fresh but in dried specimens often collapsing and nearly invisible, the dissepiments rather thick walled and entire; spores allantoid, hyaline, 3.5 to 4.5 x 1 μ; cystidia none; trama and subiculum compact, of thin-walled hyphae that are colorless except for the tips that are frequently filled with a brownish substance, branched, 2 to 4 μ in diameter, often sparingly encrusted with small crystals; cross walls present but not conspicuous; clamp connections lacking.

On rotten wood both of deciduous and of coniferous trees.

Type locality: South Ballston, N. Y. C. H. Peck. Also collected at Wright's Gap, Center co., Pa., on hemlock wood, September 12, 1916; at Musser's Gap, Center co., Pa., on dead wood. L. O. Overholts, no. 3431 and no. 2944 respectively.

Poria macouni (Peck)

Plate 8, figures 3–6

Polyporus macouni Peck, Bot. Gaz., 4: 169. 1879.

Original description. Effused, irregularly tuberculate, tawny-ferruginous; pores minute, subrotund, somewhat unequal, the dissepiments generally thick and obtuse; spores subglobose, .00025 of an inch in diameter.

Creeping over and encrusting mosses. Belleville, Ontario. Macoun.

The species belongs to the section *Resupinati*. The specimens indicate that the plant is composed of numerous small unequal and irregular confluent tubercular masses whose porous surface gives them a somewhat spongy appearance. The irregular and uneven surface of the whole mass is probably due mainly to the character of the place of growth.

Notes. The original packet is now preserved in a herbarium box at Albany. It contains a single specimen that measures 7 cm long by about 3 cm broad, a photograph of which is reproduced on plate 8, figure 3. The fungus presents a very rough and undulating surface as though an attempt had been made to form numerous small pilei. The lower side of these nodules bears the nearly vertical pores. These, then, are not continuous over the surface but collected in small groups. The uneven appearance of the fructification may be mostly due to the fact that it is growing over mosses, and some moss fragments can be seen embedded in it. The thickness of the fructification is from 2 to 4 mm. There is a distinct brown subiculum from which the nodules arise. The tubes are 1.5 to 2.5 mm. long where best developed. Their mouths are rounded and rather small, averaging about 4 or 5 to a millimeter. The dissepiments are thick and entire. There is no sheen or silkiness to the hymenium.

The spores are oblong-ellipsoidal or oblong, hyaline, and measure 4.5 to 5.5 by 2 to 2.5 μ (plate 8, figure 5). Setae are abundant and project conspicuously into the lumen of the tube. They are sharp pointed and dark brown in color (plate 8, figure 6). The hyphae of which the subiculum and the trama are composed are dark brown in color and for the most part unbranched. A few cross walls are present but they are inconspicuous and are easily overlooked. There are no clamp connections on these hyphae. Their diameter varies from 2.5 to 3.5 μ (plate 8, figure 4).

A careful perusal of the above facts suggests that the species may not be distantly related to the plant known in this country as Poria ferruginosa (Schrad.) Fries, and the writer is of the opinion that this connection will eventually be established. The unusual habitat and the consequent irregularities of growth are the only separating characters. The shape of the spores is characteristic of that species. In fact the writer is unacquainted with any other species of Poria or Polyporus that has spores of this shape and size. The characters of hyphae and setae also agree with that species. P. macouni is not listed by Murrill in the North American Flora where the brown species of Poria are described.

Redescription. Subiculum effused for several centimeters, the pores collected into vertical groups forming nodules — hence surface of fructification very uneven; general coloration brown; tubes 1.5 to 2.5 mm long, their mouths rounded, ochraceous tawny to tawny, averaging 4 to 5 to a millimeter; dissepiments thick and entire; spores oblong-ellipsoidal or oblong, hyaline, 4.5 to 5.5 x 2 to 2.5 μ; setae abundant, sharp-pointed, projecting conspicuously; hyphae of trama and subiculum brown, nearly simple, 2.5 to 3.5 μ in diameter, cross walls present but indistinct; no clamp connections.

Overrunning moss.

Type locality: Belleville, Ontario, Canada. Macoun. Not otherwise known to the writer.

Poria marginella (Peck) Sacc.

Plate 9

Syll. Fung. 9: 194. 1891.

Polyporus marginellus Peck, 42d Rep't N. Y. State Mus., p. 122. 1889 (Bot. Rep't, p. 26).

Original description. Resupinate, effused, forming extensive patches, 1 to 3 lines thick; subiculum distinct, firm, subcinnamon, the extreme growing margin white, becoming dark-ferruginous with age; pores at first short, sunk in the tomentum of the subiculum, then longer, minute, rotund, often oblique, brownish-ferruginous, glaucous within, the dissepiments thick, obtuse.

Dead bark and decorticated trunks of spruce, Abies nigra. North Elba. Sept.

Remarkable for and very distinct by the narrow downy white margin that borders the growing plant.

Notes. The type collection consists of two small pieces 5 to 7 cm square, mounted on a herbarium sheet, and several others preserved in a herbarium packet. Fortunately also, several other good collections from different points in the United States are available for comparison. The color of the hymenial surface is near snuff brown, cinnamon brown, or more tawny, and the margin itself is white in fresh plants but may become brown in herbarium specimens. This margin is compactly tomentose, narrowly sterile, and quite thin. The thickness of the hymenium-producing portion varies from 1 to 5 mm, the larger thickness sometimes involving the growth of two years, although for the most part the fungus is strictly annual. The subiculum is conspicuous, bright tawny in color and at times as much as a millimeter thick. The tubes are usually rather oblique and in length may reach as much as 4 mm although more often they are not more than 2 or 3 mm long. Their mouths are more or less rounded or somewhat irregular and average 4 to 5 to a millimeter. The dissepiments are about as thick as the diameter of the tubes, and are even and entire. There is no sheen or silkiness to the hymenium.

Murrill (North America Flora, 9: 5. 1907) reported the spores of this species as "ovoid, hyaline, 6 x 5 μ." Examination of the type material shows, however, that they are allantoid, hyaline, quite small, 3 to 5 μ long and about 1 μ broad (plate 9, figure 5). These spores are found abundantly in sections, and many of them were seen attached to basidia, so there can be no question as to their identity. The same type of spore has been found in several other collections of this species. Many setae are present in the hymenium, but they do not project so prominently as in many other species (plate 9, figures 2–3). In crushed preparations (plate 9, figure 4) they are seen as the enlarged, blunt-pointed, dark-brown ends of ordinary hyphae, but they are quite different from the very large setaelike bodies of Poria setigera and Polyporus glomeratus. Their diameter is only 3 to 5 μ. The hyphae of the trama and subiculum are dark brown, rather heavy walled, and sparingly branched (plate 9, figure 6). Cross walls are faintly visible in the darker colored of these and more conspicuous in those of lighter color. There are no clamp connections on these hyphae. Their diameters are from 2.5 to 5 μ.

The type material is from dead wood of spruce and that substratum appears to be the usual one in the eastern United States. In the northwestern United States it occurs on Abies and on Larix.

The species belongs in the same group as Poria ferruginosa Fr., Poria contigua (Pers.) Fries, and Poria inermis. From the first two it differs in the smaller spores and from the last in the presence of setae and in the hyaline spores. In fresh specimens the light-colored margin is often distinctive.

Redescription. Annual or rarely perennial, brown, inseparable (?), effused for several centimeters, with a narrow, thin, sterile, tomentose border of light color in fresh plants; subiculum conspicuous, bright tawny, up to 1 mm thick; tubes oblique, 2 to 4 mm long, their mouths snuff brown, cinnamon brown, or slightly grayish, rounded, averaging 4 to 5 to a millimeter; dissepiments relatively thick, entire; spores allantoid, hyaline, 3 to 5 x 1 μ; setae abundant, not conspicuous, projecting, blunt-pointed, 3 to 5 μ in diameter; hyphae dark brown, heavy walled, nearly simple, 3 to 5 μ in diameter, cross walls visible; no clamp connections.

On wood and bark of spruce. Also on Abies and Larix from the northwest (Weir).

Type locality, North Elba, N. Y. C. H. Peck. Also known from the northwestern United States (Weir).

Poria mutans Peck

Plate 10, figures. 1–4

43d Rep't N. Y. State Mus., p. 39. 1890.

Polyporus mutans Peck, 41st Rep't N. Y. State Mus., p. 77. 1888.

Original description. Resupinate, rather thick, tough, following the inequalities of the wood; pores minute, rotund, short, buff-yellow or cream color, becoming dingy red or dull incarnate where wounded, the subiculum fibrous, changing color like the pores, the whole plant assuming an incarnate hue when dried.

Decaying wood of deciduous trees. Selkirk. August.

Sometimes a narrow, reflexed obtuse margin of a yellowish brown color is formed. The pores are often oblique. The species appears to be quite distinct by reason of its peculiar colors.

Notes. The type collection contains abundant material but the species is one that changes much in drying and consequently it must be carefully interpreted. The material is in pieces up to 4 cm long and broad (plate 10, figure 1). The chief characteristics of the dried specimens are the hard, almost bony consistency and the dull rusty color. The color of the hymenium is now light pinkish cinnamon in some specimens, and tawny or russet in others, and therefore with less red than in P. laetifica, although the colors of the fresh plant must be similar to those of that species, judging from Peck's descriptions. Only in the younger specimens is there a rather thick sterile and often more or less abrupt margin present; in mature specimens the margin is fertile. The thickness of the hymenium-producing portion is at present 1 to 5 mm and probably in fresh plants somewhat thicker. The subiculum is quite conspicuous and its thickness sometimes equals the length of the tubes, but is often considerably less. The tubes vary in length from 1 to 3 mm in the type. In a collection from Bolton, N. Y., they are as much as 5 mm long. Their mouths are angular in mature plants but rounded in young specimens. According to Peck their color is buff yellow or cream yellow in fresh specimens and becoming red when wounded. Their diameter is 3 to 4 to a millimeter where mature, and the dissepiments are rather thin but entire. There is no sheen or silkiness to the hymenium.

The spores are broadly ellipsoidal or nearly globose, but some are apiculate at one end and inclined to ovoid (plate 10, figure 2). They are hyaline under the microscope and 3.5 to 5 μ long by 2 to 3.5 μ broad. The best developed portions of the hymenium in the type collection are sterile and where spores were obtained it was difficult to prove their connection with the basidia; indeed mature spores attached to the basidia were not seen. But a large number of basidia have small subglobose, immature spores on sterigmata and undoubtedly the larger spores of the same general shape belong to the fungus. Moreover, in another collection of the same species made at Croghan, N. Y., by Peck, mature spores are found on basidia of the usual type. It was at first suspected that the spores of this species would be allantoid, as are those of closely related plants. There are no cystidia in the hymenium (plate 10, figure 4). The trama and subiculum are made up of very compact hyphae that are colorless, and 2.5 to 4 μ in diameter. Of these some are encrusted and some smooth, the latter type occurring in greater numbers in the growing margin (plate 10, figure 3). Cross walls are present but not conspicuous and their rarity suggests that many are invisible by the methods used for their detection. Clamp connections are present but not at all common. Both clamp connections and cross walls are more or less obscured in the encrusted hyphae. Branches are infrequently seen.

The species is related to Poria laetifica and in fresh condition this resemblance must be considerably heightened. Both are of the same general color when fresh, and both become red where bruised and on drying. P. mutans is of harder consistency when dry and has very different spores. The colors on drying are quite distinct — so much so that the species can easily be separated on that character provided it proves to be constant over a wide range of specimens.

Redescription. Effused for several centimeters, annual, apparently separable, with an abrupt sterile margin when young, later the margin sometimes entirely fertile, drying hard and firm; subiculum present, distinct, rarely as much as 2 mm thick and usually much thinner; tubes 1 to 5 mm long, their mouths buff yellow or cream yellow (fide Peck) when fresh, red where bruised, pinkish cinnamon to tawny or russet in herbarium specimens, angular, thin-walled, entire, averaging 3 to 4 to a millimeter; spores ellipsoidal or nearly globose, sometimes ovoid, hyaline, 3.5 to 5 x 2.5 to 3.5 μ; cystidia none; tramal and subiculum hyphae very compact, hyaline, many encrusted with rather large crystals, some entirely unencrusted, very sparingly branched, 2.5 to 4 μ in diameter; cross walls not frequently seen; clamp connections present but rather rare.

On chestnut wood. Probably on wood of other kinds of deciduous trees.

Type locality: Selkirk, N. Y. C. H. Peck. Also at Croghan, Bolton and Savannah, N. Y. C. H. Peck. Not otherwise known to the writer.

Poria mutans var. **tenuis** Peck

Plate 10, figure 5; plate 11, figures 1–4

43d Rep't N. Y. State Mus., p. 39. 1890.

Original description. Very thin, tender, the margin often wide and downy. Bark and wood of spruce, Picea nigra. Sevey. July.

The species appears to differ from P. cruentata Mont. in having the pores and subiculum of one uniform yellowish or subochraceous color, which changes where bruised or in drying to a dull red or subincarnate hue.

Notes. This, originally described as a variety of the former species (Poria mutans), should in all probability be regarded as distinct for reasons brought out in the following discussion. The writer hesitates to give it specific rank at present, however, as it is not certain that the spores have been found. The name is preoccupied by P. tenuis Schw. and P. tenuis Karst. Consequently if this plant be raised to specific rank it must have a new name.

Apparently the type collection well represents the species in external form and appearance. The largest specimen is scattered over a piece of wood 12 cm long and 5 cm broad (plate 10, figure 5). The color of the fructification in young specimens is now onion-skin pink or vinaceous cinnamon, and in older specimens near burned umber or carob brown but with somewhat more red than in those colors. The plant evidently develops by forming an extensive subiculum on which the tubes are later produced. Consequently the hymenium-producing portion is usually surrounded by a broad sterile margin, at present vinaceous cinnamon in color. Perhaps if collected later in the season this might largely have disappeared. This margin is finely and compactly tomentose, and may be as much as a centimeter broad. It is rather thin and not at all fimbriate. The thickness of the hymenium-producing portion is not more than one-half of a millimeter and consists of very short tubes seated on a very thin but quite evident subiculum. The mouths of the tubes are decidedly angular in outline and average

3 to 4 to a millimeter. The walls of the tubes are very thin but entire. There is no sheen or silkiness to the hymenium.

Spores have not certainly been found in the type collection. One preparation yielded a few cylindric spores that were colorless and measure 4 to 5 μ in length and about 1 μ in breadth (plate 11, figure 2). Most collections of Poria in this section, in the writer's herbarium have this type of spore and it is probably the kind to be expected in this plant. There are no cystidia in the hymenium (plate 11, figure 1). The trama and subiculum are of quite compactly arranged hyphae that are colorless, rarely branched in the subiculum but more frequently so in the trama, and with few clamp connections. Cross walls are rarely seen except in company with the clamp connections. In the subiculum many of these hyphae are encrusted and vary in diameter from 2.5 to 5 μ (plate 11, figure 3). Those of the trama are more often unencrusted, and somewhat smaller, with a diameter of 2 to 3.5 μ (plate 11, figure 4).

The type collection differs from P. mutans in the following characteristics. It is much thinner; the colors of the dried plants are quite different; their consistency is not at all that of P. mutans; that is, not hard and bony on drying. The hymenial characters with the possible exception of the spores are the same as those of that species.

The type collection is apparently from bark and decorticated wood of spruce. The decayed wood is straw yellow in color, quite brittle and readily separates into concentric layers. One specimen shows advanced stages of a pocket or piped type of decay but another organism may be responsible for it.

Redescription. Annual, separable, effused for 10 to 12 cm or more, with a compactly tomentose, sterile margin 1 cm or more broad, vinaceous cinnamon in color; subiculum quite thin but conspicuous under a lens; tubes scarcely .5 mm long, their mouths yellowish or subochraceous when fresh (fide Peck), vinaceous cinnamon, onion-skin pink, or much darker (near burnt umber or carob brown) in dried plants, angular, thin-walled, entire, averaging 3 to 4 to a millimeter; spores not definitely known, probably cylindric or allantoid, hyaline, 4 to 5 x 1 μ; cystidia none; trama and subiculum compact, of hyaline, thin-walled, simple or slightly branched hyphae, often heavily encrusted in the subiculum, but less so in the trama, 2.5 to 5 μ in the former, 2 to 3.5 μ in the latter; cross walls mostly inconspicuous; clamp connections present but not abundant.

On bark and decorticated wood of spruce.

Type locality: Sevey, N. Y. C. H. Peck. Not otherwise known to the writer.

Poria myceliosa Peck

Plate 10, figure 5, plate 11

N. Y. State Mus. Bul. 54, p. 952. 1902

Original description. Subiculum membranaceous, separable from the matrix, connected with white branching strands of mycelium which permeate the soft decayed wood, or with radiating ribs which run through the broad sterile fimbriate white margin; pores very short, subrotund angular or subflexuous, the dissepiments thin, acute, dentate or slightly lacerate, pale yellow; spores minute, subglobose, .0008–.00012 of an inch broad. Round Lake, Saratoga co. August.

This fungus forms patches several inches in extent on much decayed wood of hemlock. It follows the inequalities of the surface on which it grows. It is scarcely more than half a line thick. The pores develop from the center toward the margin and at first are mere concavities in the subiculum. The species is apparently related to P. tenuis Schw., from which it differs in habitat, color and the prominent mycelial strands. In this last character it bears some resemblance to P. vaillantii (DC) Fr.

Notes. The type collection contains abundant material in various stages of development. The largest specimen is about 8 cm broad and 12 cm long, and the smallest about 2 cm in diameter. The color of the hymenial surface is now nearly cinnamon buff in the more mature specimens and a lighter color near pinkish buff in younger specimens. The species grows widely effused and has a white or whitish sterile border that varies in width up to 15 mm. This border is characteristically fimbriate and from it strands of white mycelium sometimes radiate outward and downward into the substratum (plate 12, figure 1). The largest of these strands are about half a millimeter in diameter but those on the surface of the substratum are much smaller and in some specimens they are entirely lacking. The thickness of the hymenium-producing portion is usually less than one-half of a millimeter and never reaches a millimeter. Of this thickness practically all represents the length of the tubes, as the subiculum on these portions is extremely thin but quite conspicuous. The mouths of the tubes are decidedly angular in outline and vary in diameter from 1 to 4 to a millimeter, The best formed ones average about 3 to a millimeter, but apparently several adjacent tubes may unite into a single cavity which in extreme instances may be as much as 1 mm in diameter, or it may be elongated or somewhat sinuous. The walls of the dissepiments are thin and in some specimens decidedly dentate, but usually not markedly so. There is no sheen or silkiness to the hymenium.

The spores are hardly subglobose as described by Peck, but are considerably longer in one direction than the other, and the writer would call them ellipsoidal. When viewed obliquely or from the end they present a nearly globose appearance (plate 12, figure 4). Their dimensions are quite small with a length of 2.5 to 4 μ and a breadth of 2 to 2.5 μ. They are colorless and smooth-walled. The basidia are also quite small, not at all prominent, and not more than 2.5 μ in diameter. There are no cystidia (plate 12, figure 2). The hyphae of the trama are loosely arranged so that thin free-hand sections present a very open structure. These hyphae are colorless, 2 to 3.5 μ in diameter, and frequently branched, the longitudinal axis of the branch always being at nearly right angles to that of the hyphae from which it is produced. All branches originate near cross walls (plate 12, figure 3) and the first cell of the lateral branch is rather short, rarely 10 μ long; a cross wall with a clamp connection is then produced and the next cell is much longer. Clamp connections are quite abundant. In the subiculum the hyphae are more irregular and, especially on the growing margin, coalescing strands of all sizes are seen to be forming the larger mycelial cords visible on those portions of the fructification.

According to the original description reproduced above, the type collection was taken from hemlock wood at Round Lake, Saratoga co., N. Y. August 21, 1900. But the label on the sheet containing the herbarium specimens gives the locality as Floodwood, N. Y. Dr H. D. House, the present State Botanist of New York, has noticed this discrepancy and has attached the following typewritten note to the sheet.

"The type locality of Poria myceliosa Peck as given in Mus. Bul. 54, p. 952–53. 1902 (viz, Round Lake, Saratoga co.) is not correct. Doctor Peck's private notes show that the species was collected at Floodwood on August 31, 1900, and his notes of that date contain the preliminary draft of the description of Poria myceliosa."

The species is rather closely related to Poria fimbriatella Peck, which differs conspicuously in the presence of distinct encrusted cystidia in the hymenium and in the absence of cross walls and clamp connections on the hyphae. That species also has the small ellipsoidal spores and rhizomorphic strands of Poria myceliosa. One collection made on August 17th, at Floodwood, N. Y., by Peck and referred by him to Poria fimbriatella belongs to the species under discussion, as does also a collection from the Catskill mountains labeled by him as Polyporus vaillantii. Both of these may have been prior collections, but the absence from the data of the year of collection obscures this point. A specimen has recently been received from E. T. Harper, collected on hemlock wood at Frankfort, Mich., August 1908.

The characteristic features of the species appear to be the thin separable growth with short tubes and rhizomorphic strands, and the small spores. The writer's interpretation of Poria vaillantii (DC.) Fries, calls for a similar plant, but one that is pure white in color, and with quite different spores.

The collections so far examined have been from very rotten wood and no definite statements can be made regarding the nature of the decay produced by the fungus.

Redescription. Effused, 2 to 12 cm broad, separable, with a broad, white, sterile, fimbriate margin often ending in small rhizomorphic strands that follow the surface of the substratum or become embedded in it; subiculum exceedingly thin, white, scarcely discernible in mature specimens; tubes scarcely .5 mm long and often considerably shorter, first appearing as shallow depressions in the subiculum, their mouths pale yellow when fresh (fide Peck), becoming pinkish buff to cinnamon buff in herbarium specimens, angular, thin-walled, often dentate, averaging about 3 to a millimeter but occasionally more or less confluent and up to 1 mm in diameter; spores ellipsoidal, smooth, hyaline, minute, 2.5 to 4 x 2 μ; basidia, 2 to 3 μ in diameter; cystidia none; tramal tissue rather open, composed of thin-walled, colorless, branched hyphae, 2 to 3.5 μ in diameter, the branching more or less right angled; clamp connections abundant.

On well-rotted hemlock wood.

Type locality: Floodwood, N. Y. C. H. Peck. Also known from Michigan.

Poria odora (Peck) Sacc.

Plate 13

Syll. Fung. 6: 294. 1888

Polyporus (Physisporus) odorus Peck, 38th Rep't N. Y. State Mus., p. 92. 1885

Original description. Effused, 2 to 3 lines thick, even, firm but brittle, moist, separable from the matrix, white sometimes stained with reddish yellow on the abrupt, rather thick, slightly fimbriate margin; pores very minute, rather long, equal, entire, white, arising from a thin but distinct subiculum; odor strong, disagreeable.

Under surface of decorticated prostrate trunks of spruce. Osceola. Aug.

It forms patches several inches broad and sometimes more than a foot long. It is distinguished from P. vulgaris by being separable from the matrix, moist, having longer pores and a strong odor. From the next following species [Poria subacida (Peck) Sacc.] it may be known by its smaller pores, more brittle texture and its different odor.

Notes. The type collection consists of four fragments mounted on a herbarium sheet and several specimens preserved in a paper packet. The largest specimen is 6 cm long and about 3 cm broad (plate 13, figure 1). The specimens are very rigid and firm and apparently become considerably colored on drying. According to Peck the fresh specimens are white with sometimes a stain of reddish yellow on the margin. At present the color varies from avellaneous to cinnamon buff or clay color, and suffused with a gray pruinosity. The plants probably become the darker of these colors when bruised.

The margin is rather abruptly sterile and still retains a reddish yellow color in most cases. In some specimens it almost entirely disappears. The thickness of the hymenium-producing portion is from 2 to 5 mm. The subiculum is rather conspicuous but scarcely more than one-fourth of a millimeter thick, and white in color. The tubes are 2 to 4 mm long and their mouths are more or less angular and covered with a grayish bloom. They vary in diameter from 5 to 7 to a millimeter. The walls are rather thick and entire. There is no sheen or silkiness to the hymenium.

The spores are allantoid or cylindric, hyaline, 3 to 4 μ long by about 1 μ broad (plate 13, figure 3). The basidia are quite small, usually not more than 2 μ in diameter. There are no cystidia or other sterile structures in the hymenium (plate 13, figure 4). The trama is very compact and in section gives an appearance approaching that of the trama of Fomes connatus, but with the walls of the hyphae not quite so thick and the appearance not quite so much like that of a pseudo-parenchyma. The hyphae are flexuous, nearly simple, hyaline, and without clamp connections. Apparently cross walls are lacking (plate 13, figure 2). Their diameter in the subiculum is 3 to 7 μ, but in the trama they are sometimes slightly smaller, 2 to 5 μ in diameter. Small isolated roughened areas are frequent on these hyphae. These areas are not encrusted with crystals but the roughening is apparently due to a breaking and scaling of the hyphal walls.

According to Doctor Peck the species has a strong disagreeable odor in fresh plants. This has not persisted in the herbarium specimens.

The nature of the decay produced can not be determined from the type collection, as no fragments of the substratum are attached to the specimens.

The affinities of the species are in doubt. The combination of characters presented is quite unlike that found in other species of Poria. The plants bear some resemblance to Poria subacida, but are easily distinguished by the much smaller tubes and the much different spores. It also bears resemblance to Poria ornatus but the pores are smaller and the spores different. Specimens previously referred by the writer to Polyporus zonalis as the temperate region form of that tropical or subtropical species agree very closely in general appearances with this species. The spores, however, are decidedly different.

It might be mentioned in this connection that several examinations of the type specimens were necessary before spores were obtained. As is often the case in resupinate specimens, the best developed parts of the hymenium showed no spores and in fact no hymenial structure of any sort. It was only when examination was made of those tubes nearer the margin that spores were obtained and the hymenium was found to be well developed.

Apparently the chief characteristics of the species are the allantoid spores, the gray pruinosity on the hymenium, the compact trama and the large hyphae. I have seen no other collections of this species and more study is necessary to decide as to whether or not certain factors should be regarded as of specific importance. The dried specimens are not fragile but are quite firm and hard.

Redescription. Effused for perhaps 10 cm or more (fide Peck) with an abrupt, narrow, sterile, reddish yellow margin; subiculum conspicuous but thin, white, persisting in dried specimens; tubes 2 to 4 mm long, their mouths white (fide Peck), more or less cinnamon buff or clay color in herbarium specimens, suffused with a grayish pruinosity easily rubbed off when fresh, angular, rather thick-walled, entire, averaging 5 to 7 to a millimeter; spores allantoid or cylindric, hyaline, 3 to 4 x 1 μ; basidia 2 μ in diameter; cystidia none; trama very compact, composed of flexuous, nearly simple, hyaline hyphae, 3 to 7 μ in diameter, apparently without cross walls; no clamp connections.

On decorticated trunks of spruce.

Type locality: Osceola, N. Y. C. H. Peck. Not otherwise known to the writer.

Poria ornata (Peck) Sacc.

Plate 14

Syll. Fung., 6: 322. 1888

Polyporus (Physisporus) ornatus Peck, 38th Rep't N. Y. State Mus., p. 92. 1885

Original description. Effused, 1 to 2 lines thick, somewhat tenacious, adnate or inseparable from the matrix, white, the surface slightly undulate or uneven, the margin definite, studded with drops of moisture when fresh, spotted with dotlike depressions when dry; pores subrotund, minute unequal, often oblique.

Decaying prostrate trunks of deciduous trees. Osceola. August.

This species is at once distinguished by its adnate subiculum and its peculiarly spotted margin. The spots are watery white in the fresh state and each one is covered by a drop of moisture. In the dried plant the place previously occupied by the drop of moisture becomes a small depression in the subiculum.

Notes. The type collection contains but a moderate amount of material at present, but apparently enough to exhibit the important characteristics of the species. The largest and best developed specimen is only about 10 cm long and 5 cm broad, but the fungus probably occurs more widely effused. Peck describes it as " adnate or inseparable from the matrix " but inspection of the lower surface of the plants shows a smooth surface where it has been in contact with the substratum. In this respect it has the appearance of Poria subacida when growing on a smooth surface, and that species under such conditions is separable. The hymenial surface is now pinkish buff to pinkish cinnamon in color. At first the plant has a rather thick margin that is sterile for a width of 3 to 4 mm, but toward maturity this becomes narrower and in the largest specimen is only 1 to 2 mm wide. This margin is marked with scattered small, subrounded, depressed spots that vary in size from one-half of a millimeter to a millimeter in diameter. These spots are not conspicuous but are quite evident under a lens. According to Peck, they represent areas previously occupied by small drops of moisture. This type of spotting is not unknown in other fungi and the exudation of drops of moisture has been characterized as a " weeping " habit. Extended observations are necessary before we can state whether or not this " weeping " is a character of specific importance. The margin of the plant is somewhat uneven but not fimbriate. Mature specimens have a total thickness that varies up to 2 mm. The subiculum is quite thin, often less than one-half of a millimeter. The tubes are often very oblique and even almost vertical where the specimens apparently grew on the vertical side of the substratum. In such cases the tubes may be as much as 6 mm in length, but under more normal conditions of growth they do not exceed 1 to 2 mm. The hymenial surface in specimens from more vertical positions is thrown into undulations as seen in the illustration (plate 14, figure 1). Such examination as it is possible to make of the type specimens indicates that this is hardly to be considered as an effort on the part of the fungus to form a pileus, but that the uneven surface of the substratum is mostly responsible for it. The mouths of the tubes are subrounded, unequal, and in vertical positions decidedly oblique. They average about 3 to 3½ to a millimeter. The dissepiments are rather thick and on the mouths of the tubes there is a fine pubescence in younger specimens, but the more mature ones are glabrous. The only lacerations are those due to the vertical growth of some specimens. There is no sheen or silkiness to the hymenium.

The spores of the species are ellipsoidal and often with a minute apiculus at one end. This apiculus when present is probably always more or less excentric in position, though certain view of the spores present it in a nearly central position. Some spores tend toward oblong-ellipsoidal in shape. They are colorless, smooth-walled, and measure 4 to 5 μ in length and 2.5 to 3.5 μ in breadth (plate 14, figure 5). Basidia are rarely seen in free-hand sections of the plant. There are no cystidia (plate 14, figure 2). At times irregular scattered crystals appear upon or in the hymenium. The tramal tissue is of fairly compact structure. The hyphae of the subiculum and the growing margin are quite large, averaging 3 to 7 μ in diameter. They are for the most part unbranched and in many the walls are very thick — similar in that respect to those of P. subacida and P. indurata. Normal clamp connections are not present on these but some of the hyphae show the characteristic forms presented in plate 14, figure 4. At " a " apparently the small outgrowth is a clamp connection, as in other species they often appear so where a hypha breaks at a cross wall. At " b " and " c " are larger bodies that still retain much of the characteristic shape of clamps and in all probability have originated from them. It would be interesting to know what developments such apparently abnormal clamps might lead to in this and other species. In the trama most of the hyphae are similar to those of the subiculum, but there are also some that are quite small, rarely more than 2.5 μ in diameter. These are considerably branched but their small size and their transparent nature makes it difficult to ascertain whether or not cross walls and clamp connections are present. In some cases they are easily detected (plate 14, figure 3) but there are many small hyphae in which they are apparently lacking.

The species is listed by Peck as growing on dead wood of deciduous trees. There is not enough of the substratum attached to the specimens to determine the host of the type collection nor the nature of the decay resulting from the presence of the fungus. But one collection of the species is preserved in the herbarium at Albany. In most respects the species resembles Poria subacida Peck, and may eventually be referred to that species. A fine specimen has recently been received from E. T. Harper, collected at Frankfort, Mich.

Redescription. Effused for several centimeters, separable from the matrix, with a narrow, sterile, nearly even, but rather thick margin 1 to 4 mm broad, marked with scattered, rounded, depressed spots; subiculum evident but rather thin, white; tubes 1 to 2 mm long, or in vertical positions 4 to 6 mm long, often very oblique, their mouths white when fresh (fide Peck), pinkish buff to pinkish cinnamon in herbarium specimens, subrounded, gaping and oblique in vertical positions, averaging 3 to 3.5 to a millimeter, the dissepiments rather thick and finely pubescent when young, glabrous when mature; spores ellipsoidal or oblong-ellipsoidal, smooth, hyaline, 3.5 to 5 x 2.5 to 3 μ, often slightly obliquely apiculate; basidia pyriform or short clavate, 3 to 5 μ in diameter; cystidia none; tramal tissue rather compact, of hyaline, thin-walled, flexuous, branched hyphae, 1 to 2.5 μ in diameter; clamp connections small and inconspicuous; subiculum hyphae mostly unbranched, 3 to 6 μ in diameter but often irregularly enlarged, with inconspicuous clamp connections.

On prostrate trunks of deciduous trees.

Type locality: Osceola, N. Y. C. H. Peck. Also found in Michigan.

Poria pinea (Peck) Sacc.

Plate 15

Syll. Fung., 9: 194. 1891

Polyporus pineus Peck, 41st Rep't N. Y. State Mus., p. 78. 1888

Original description. Resupinate, irregular from the inequalities of the matrix, rather tender but separable from the matrix, the thin subiculum and margin whitish, sometimes tinged with yellow; pores rather large, angular, unequal, two to three lines long, often oblique and lacerated, dingy whitish, becoming blackish where bruised or wounded, the whole plant becoming blackish or blackish-brown in drying.

Wood and bark of pine. Selkirk. August.

The species is apparently allied to P. obliquus, but the pores can not be described as very small, nor has our plant an "erect crested margin." It has a distinct subiculum on which the pores are formed and by reason of which the plant is separable from the matrix.

Notes. This is a peculiar species and one can not obtain an adequate idea of it from the dried specimens. The type collection contains rather abundant material but in small pieces less than 5 cm long. The species is dingy white when fresh, becoming very much darker on drying. The color of the hymenial surface at present is near fuscous or bister. Very young specimens have a whitish or yellowish sterile thin margin which may be somewhat fimbriate and in old specimens disappears entirely. It is much lighter in color than the hymenium, at least in the dried specimens. The thickness of the hymenial surface varies up to 6 mm in dried specimens, but probably the fresh specimens were somewhat thicker. The tubes are 3 to 6 mm long and for the most part oblique on the substratum. Their mouths average 1½ to 2 to a millimeter, but in drying are likely to collapse more or less and so be obscured. They are angular and the dissepiments are rather thin but entire (plate 15, figure 1). There is no sheen or silkiness to the hymenium.

The spores of this species are very unusual and unlike those of any other species of Poria. In fact, as to color, they are unlike those of any other species of pore-fungus known to the writer. Under the microscope they are more or less fuscous, not unlike those of certain of the dark-spored gill fungi. These spores are also of larger size than the writer has seen in any other species of Poria. They vary from 7.5 to 11 μ in length and 4 to 7 μ in width. In shape they are ellipsoidal to ovoid, and with smooth walls (plate 15, figure 6). Dr Burt in a recent publication (Ann. Mo. Bot. Gard., 4:360–61. 1917) gives the spore measurements for this species as 10 to 12 by 6 to 7 μ, but my measurements make them considerably shorter. There are no cystidia in the hymenium (plate 15, figure 2). The basidia in the type specimens are quite conspicuous and in free-hand sections (plate 15, figure 2) they have a tendency to separate in a smooth layer from the trama. In all cases there is a distinct line of cleavage between basidia and trama and in some cases the basidial layer has separated and curled away from the trama. This region of separation is represented in the microphotograph by a whitish line or band. Such a character has not been seen by the writer in any other species of pore fungus. It is probably correlated with the parallel arrangement of the tramal hyphae mentioned below.

The trama is made up of closely compacted hyphae in which the arrangement is more strikingly parallel than is usually the case. In some the walls have apparently collapsed and so are more or less irregular (plate 15, figure 3). Others are more definite. Cross walls are visible and quite conspicuous in some hyphae, but apparently absent in others. No clamp connections are present. The hyphae are simple or sparingly branched (plate 15, figure 4). Their diameter varies from 1 to 3 μ. In the subiculum the hyphae are more regular and slightly larger, with a diameter of 2 to 6 μ. On some of these hyphae clamp connections are present and quite conspicuous (plate 15, figure 5).

Dr Burt, in the above-mentioned paper, has listed this species as a synonym for Merulius incrassatus B. & C., and transferred that species to the genus Poria. Merulius spissus Peck is also given as a synonym. Poria pinea is undoubtedly a Poria. In oblique situations the tubes of Peck's types sometimes reach a length of 6 mm, while Dr Burt reports them as up to 3 mm in length. The colors given by Dr Burt are probably based on the Berkeley and Curtis types, as " mouse gray " has not enough brown, and "aniline black" has too much purple in it to represent Peck's types.

Redescription. Effused for several centimeters, annual, rather tender, separable, with a thin whitish or yellowish sterile margin when young; subiculum very thin, whitish, rather conspicuous; tubes 2 to 6 mm long, their mouths dingy whitish (fide Peck) when fresh, becoming darker where bruised or dried, fuscous or bister in herbarium specimens, angular, thin-walled but entire, averaging 1.5 to 2 to a millimeter; spores ellipsoidal or ovoid, smooth, fuscous, 7.5 to 11 x 4 to 7 μ; cystidia none; trama and subiculum compact, of thin-walled, partially collapsing and irregular hyaline hyphae with inconspicuous cross walls and clamp connections, nearly simple, 1–3 μ in diameter.

On wood and bark of pine.

Type locality: Selkirk, N. Y. C. H. Peck. Not otherwise known to the writer.

Poria radiculosa (Peck) Sacc.

Plate 16

Syll. Fung., 6: 314. 1888

Polyporus radiculosus Peck, 40th Rep't N. Y. State Mus., p. 54. 1887

Original description. Resupinate, effused, thin, soft, tender, orange-yellow, the mycelium creeping in and over the wood, silky-tomentose, at first white, then yellow, forming numerous yellow branching rootlike strings or ribs which are more or less connected by a soft silky tomentum; pores rather large, angular, at first shallow, sunk in the mycelium, the dissepiments becoming more elevated, thin and fragile; spores elliptical, .0002 to .00025 inch long, .00016 broad.

Half-buried chips of poplar. Populus tremuloides. Gansevoort, September.

The species is allied to P. vaillantii, in its peculiar rhizomorphoid strings of mycelium, but from this it differs decidedly in its color and texture. In these respects it approaches P. bombycinus, of which it may possibly be a peculiar variety. It is very destructive to the wood on which it grows, causing it to become soft, brittle and even friable.

Notes. From the standpoint of the type collection this species is the most unsatisfactory of all of Peck's Porias. Nothing as to general appearance, color etc., can be added beyond that contained in the original description. There are mounted on the type sheet at Albany six small bits of wood, four of which have only a few rhizomorphic strands of white or cream-colored mycelium. On the other two bits of wood there is perhaps a square centimeter of fruiting surface which apparently represents the marginal growth of the fructification, though on one of these bits the hymenium is well formed (plate 16, figure 1). The chief characteristics of the species appear to be the color, the rhizomorphic strands, and the oblong-ellipsoidal spores (plate 16, figure 6). The spores measure 5 to 7.5 μ in length and 2.5 to 3 μ in breadth. No cystidia are present (plate 16, figure 3). The hyphae of the subiculum and trama are rather characteristic. Many of them are quite irregular in outline and have the appearance of being much collapsed. In the subiculum they are often slightly encrusted and made up of rather short cells with a diameter of 4 to 7 μ. They are very transparent and thin-walled. Clamp connections are present but their walls are so thin and transparent that they easily escape detection. In the trama the hyphae are somewhat smaller, averaging 2 to 4 μ in diameter. Some are with cross walls and clamp connections but in others these are lacking. The hyphae are more or less branched in both the trama and the subiculum (plate 16, figure 4, 5).

In the same folder with the type collection there is another sheet on which is mounted an excellent representation of a species of Poria referred by Peck to P. radiculosa. Microscopic examination shows, however, that it is not the same plant, though somewhat similar as far as one is able to judge. There are two important differences. The spores in that collection are very short-ellipsoid or subglobose with much smaller dimensions than those in the type collection. They measure only 3 to 5 μ in length and 2 to 3.5 μ in breadth. Another difference is in the hyphae. In this collection they are exceptionally clear-cut in teased preparations as contrasted with the often irregular, ill-defined hyphae in the types. Their dimensions are 2.5 to 4.5 μ. Clamp connections and cross walls are abundant and extremely well defined as contrasted with the often indistinct walls and clamps of the types. These hyphae are frequently branched and hyphal anastomoses are common — both characteristics rare in the type collection.

If the type collection well represented the species, and if in general appearance this second collection were much like the types, the writer would nevertheless hesitate to refer it to this species on the basis of these microscopic differences alone. Since the type collection is so scanty that its general features can not be determined, it becomes still more important that great caution be used. The writer would like to take this second collection as representing the species, and probably there are those who have gained their idea of the species entirely from this collection. Under the circumstances, however, it seems inadvisable to do so. The date of collection of these second specimens can not be determined from the label. The locality is mentioned as the Catskill mountains, and the locality of the type is Gansevoort. It is possible that Peck had before him both of these collections when describing the species, but there is no evidence to this effect. It seems desirable to allow the matter to rest at this point for the present and to consider that the basis on which the species rests at present should be the original description and the very meager types.

Poria semitincta (Peck) Cooke

Plate 17

Grevillea, 14: 115. 1886

Polyporus (Resupinati) semitinctus Peck, 31st Rep't N. Y. State Mus., p. 37. 1879.

Original description. Subiculum thin, soft, cottony, separable from the matrix, whitish, more or less tinged with lilac, sometimes forming branching, creeping threads; pores very short, unequal, whitish or pale cream-colored, the dissepiments at first obtuse, then thinner, toothed on the edge.

Under surface of maple chips. Griffins. Sept.

This is a soft, delicate species, with meruloid pores, similar to those of P. violaceus. The lilac stains appear on the subiculum only.

Notes. This is the second species of Poria described by Peck. The material in the type collection is rather scanty, but the type sheet contains a second collection, and a third collection is mounted on another sheet. These other collections agree in all respects with the type collection so that a very good idea of the species can be obtained. The largest specimen is 7 cm long and not quite 2 cm broad. The other specimens are more fragmentary, but apparently the fructification is not widely effused (plate 17, figure 1). The color of the hymenial surface is now avellaneous buff to pinkish cinnamon or sometimes with a tinge of the lighter vinaceous colors of Ridgway. A fourth collection is preserved in a herbarium box and was collected from deciduous wood by Peck in 1904 at Lyndonville. This appears to be the same species, and if so is in a much better condition than any of the others. The color is pale ochraceous salmon or light pinkish cinnamon. According to Peck, the fresh specimens are whiter and with a tinge of lilac to the subiculum. Most of the specimens are broadly sterile on the margin, sometimes as much as 4 or 5 mm. This border is finely tomentose but scarcely fimbriate. On some specimens from the type locality and growing on beech leaves, a few white rhizomorphic strands are developed. They are not present where the specimens grow on wood. The thickness of the hymenium-producing portion is less than one-half of a millimeter in the dried specimens. The subiculum is extremely thin and the tubes very short, appearing scarcely more than shallow depressions in the dried specimens. The mouths of the tubes are more or less rounded but unequal in size, averaging about 3 to a millimeter. Peck states that the dissepiments are toothed on the edge. The writer would not describe them as toothed in the sense that the term is ordinarily used as applied to inequalities arising from lacerations of the dissepiments, but they are slightly uneven because one edge of the tube is slightly prolonged beyond the other. The dissepiments are rather thin but entire. There is no sheen or silkiness to the hymenium. The spores are oblong or short cylindric, hyaline, and 3 to 4 μ long by 2 μ broad (plate 17, figure 6). So far as the writer can ascertain from Peck's collections, they are never allantoid at maturity as in Poria griseoalba, but in other respects they resemble very much the spores of that species. The basidia measure 2 to 3 μ in diameter. There are no cystidia in the hymenium of most specimens (plate 17, figure 3) but in the Lyndonville collection they are sometimes present as projecting, weakly encrusted hyphae near the mouths of the tubes. The subiculum is rather open in construction, and made up of hyphae that are thin-walled, flexuous, branched, and with rather prominent cross walls that separate the filament into elongated cells (plate 17, figure 5). These are never so short as those frequently found in Poria griseoalba, but they are always many times as long as broad, though the dimensions do not appear to be very constant. In the trama the hyphae rarely reach the diameter of the larger ones of the subiculum and at times cross walls are difficult or impossible to make out (plate 17, figure 4). These hyphae vary in diameter from 3 to 7 μ, and hyphal fusions are extremely common. There are no clamp connections on the hyphae. Rarely they are very slightly encrusted with small, scattered granules but these are not noticeable except under rigid inspection. In several mounts made of the hyphae the peculiar origin of the basidia as illustrated for Poria griseoalba was not seen.

From several references already made to Poria griseoalba it may be inferred that propably Poria semitincta is most closely related to that species. Microscopically the two species are difficult to separate unless the shape of the apparently mature spores, the nature of the origin of the basidia, and the absence in the latter species of the very short hyphal cells be regarded as indicating specific difference. In the former species the mature spores are decidedly allantoid and several times longer than broad, while the only spores observed in Poria semitincta were not at all allantoid. Microscopically the two species are somewhat similar in some specimens but in others there is less resemblance. Both are quite thin and light colored when fresh, but the lilac tinge to the subiculum should facilitate their separation in the field. Poria myceliosa and Poria fimbriatella are also somewhat similar. The latter species may easily be distinguished by the presence of cystidia. The former species has shorter and smaller spores, hyphae 2.5 to 3.5 μ in diameter, and with clamp connections.

No information can be gathered from Peck's collections as to the nature of the decay produced by the fungus.

Redescription. Annual, separable, not broadly effused, with a white, tomentose, sterile margin from which a few rhizomorphic strands are rarely produced; subiculum very thin, noticeable only on the margin, white or with a tinge of lilac in fresh specimens (fide Peck); tubes less than .5 mm long, meruloid in dried specimens, whitish or pale-cream color when fresh (fide Peck), avellaneous to pinkish cinnamon in herbarium specimens, or a light vinaceous shade rarely persisting, the mouths subrounded, averaging 3 to a millimeter; dissepiments thin, entire but often uneven; spores oblong or short cylindric, hyaline, 3 to 4 x 1 to 2 μ; basidia 2 to 3 μ in diameter; cystidia none or at least very inconspicuous; trama and subiculum rather open, of loosely arranged, hyaline, flexuous, branched hyphae 4 to 7 μ in diameter; cross walls prominent; clamp connections absent.

On chips of maple (Acer) and perhaps woods of other deciduous trees; sometimes overrunning leaves.

Type locality: Griffins, N. Y. C. H. Peck. Also collected by Peck at South Bethlehem, at Ballston, and at Lyndonville.

Poria setigera Peck

Plate 18

51st Rep't N. Y. State Mus., p. 293. 1898

Original description. Effused, tough, thin, adnate, the thin sterile byssine or tomentose margin whitish; pores minute, rotund, shallow, $^1/_6$ to $^1/_7$ line wide, smoky brown, suffused with a grayish white pruinosity, the dissepiments entire, their edges and the sterile margin bearing smooth colored setae .003 to .005 in. long, .0005 to .0006 broad.

Bark of red maple, Acer rubrum. Gansevoort. July.

This fungus forms patches by confluence several inches in extent. The setae are external and do not appear to develop within the pores. Therefore the species is not a Mucronoporus.

Notes. The type collection contains an apparently fair representation of this peculiar and interesting Poria, if such it be. The fructifications are effused up to widths of 10 cm (plate 18, figure 1). The color of the hymenial surface is now drab to wood brown or fuscous, and at times suffused with a grayish pruinosity. Each fructification is surrounded by a sterile, cream buff or pinkish buff margin 1 to 4 mm broad (plate 18, figure 2). This margin is slightly pubescent and often with the small, brown, stiff, projecting setae characteristic of the hymenial region (plate 18, figure 4). The thickness of the hymenium-producing portion may be as much as 1.5 mm, of which by far the larger part is apparently the subiculum of the fungus. The tubes are less than one-half of a millimeter in length. Their mouths are more or less rounded, though at times slightly angular and average about 5 to a millimeter. The walls are fairly thick and always entire. There is no sheen or silkiness to the hymenium.

The spores are ellipsoidal or often reniform or boat-shaped, hyaline, and measure 3 to 5 μ in length and 2 to 3 μ in breadth (plate 18, figure 9). The setae are the characteristic structures of this species. They resemble exactly those recently described (Torreya, 17: 202–6. 1917) for Polyporus glomeratus Peck, by the writer. They are present both embedded in the trama and in the subiculum (plate 18, figure 3), and project prominently into the lumen of the tubes. Peck states that they are external and apparently do not develop within the tubes, but that is not the case, as can be seen in the illustration. They often project conspicuously from the bottom of the tubes, but many are entirely internal and never project at all (plate 18, figure 3). As in P. glomeratus, they are simply the enlarged pointed ends of special brown hyphae, and in crushed preparations can be traced for considerable distances. Their diameter is 10 to 20 μ. In length they often equal the length of the tubes. There are present also small setae of the usual type, between the basidia (plate 18, figure 3a, 8). These are sharp pointed, and have no connection with the large embedded setae. They measure only 30 to 50 by 5 to 7 μ. The hyphae of the trama and subiculum vary considerably. In the trama and the old subiculum they are decidedly brown under the microscope and cross walls are rather abundant and easily made out. They are branched at frequent intervals and measure 2 to 4 μ in diameter (plate 18, figure 6). In the subiculum of the growing light-colored margin the hyphae are hyaline, thin-walled, and cross walls are rarely seen. These hyphae are branched, are usually quite flexuous, and the terminal branches frequently taper out to a long narrow point (plate 18, figure 7). The diameter of the larger of these hyphae is 2 to 5 μ.

The relationships and indeed perhaps even the autonomy of the species are open to question. From a study of the type collection the writer obtains no evidence that the species is not simply an unusual species of Poria, but the appearance and other characteristics are unlike those of any other species.

Redescription. Annual, effused for several centimeters, inseparable (fide Peck), with a whitish or cream buff sterile margin up to 4 mm broad and often beset with the setae described below; subiculum brown, 1.5 mm thick, much thicker than the length of the tubes; tubes very short, their mouths mostly rounded, drab to wood brown or fuscous and sometimes with a grayish pruinosity, averaging about 5 to a millimeter; dissepiments fairly thick, entire; spores ellipsoidal to reniform, hyaline, 3 to 5 x 2 to 3 μ; setae abundant, of two types: large (10 to 20 μ diameter) brown, pointed bodies in the trama, the subiculum, and projecting from the hymenial surface; small (30 to 50 x 5 to 7 μ), pointed, of usual type, between the basidia; trama and subiculum compact, of brown, branched hyphae with many and conspicuous cross walls but no clamp connections, 2 to 4 μ in diameter; marginal subiculum with hyphae hyaline, branched, no cross walls, branches often tapering to a fine point, no clamp connections, 2 to 5 μ in diameter.

On bark of red maple.

Type locality: Gansevoort, N. Y. C. H. Peck. Not otherwise known to the writer.

Poria subacida (Peck) Sacc.

Plate 19; plate 20; plate 21; figure 6

Syll. Fung., 6: 325. 1888

Polyporus (Physisporus) subacidus Peck, 38th Rep't N. Y. State Mus., p. 92–93. 1885

Original description. Effused, separable from the matrix, tenacious, flexible, uneven, determinate, the margin downy, narrow, pure white; pores small, subrotund, 1 to 3 lines long, often oblique, whitish inclining to dingy-yellowish, pale tan color or dull cream color, the dissepiments thin, more or less dentate; odor strong, subacid.

Prostrate trunks and decaying wood of various trees, hemlock, spruce, birch etc. Osceola. July.

This species is not rare, but it has probably been confused with its allies. It forms extensive patches, sometimes several feet in length. It adheres somewhat closely to the matrix, but its texture is so tough that it is generally easy to strip it from its supporting substance. It is apparently closely related to P. medullapanis, but the description of that species gives the pores as medium size and entire, and makes no mention of any odor, in consequence of which we have thought our plant distinct. It is however, extremely variable.

Var. *tenuis* is very thin, scarcely a line thick, with short pores and surface nearly even. It occurs on the smooth decorticated trunks of hemlock.

Var. *tuberculosus* has the surface more or less roughened by unequal prominent tubercules, which are either scattered or clustered. They appear to be a monstrous development of the mycelium on the surface of the pores.

Var. *stalactiticus* incrusts mosses and therefore has the surface very uneven with numerous and unequal porus protuberances. It most often occurs on prostrate mossy trunks of birches.

Var. *vesiculosus* (P. vesiculosus B. & C.) has shallow scattered pores as if formed from ruptured vescicles.

Specimens of this Polyporus, unless dried under pressure, shrink and roll up in unmanageable shapes. They often contain considerable moisture when collected, and if put in press in this condition they are liable to become brown or blackish in drying. Specimens collected in a dry time or in dry situations retain their characters best. The thinner forms, if partly dried before they are put in press, sometimes retain their color and characters well. When growing on bark the patches are sometimes interrupted and irregular, in which case the margin is broader than usual and well defined.

Notes. The type collection contains four small slabs of material mounted on a herbarium sheet and as much more preserved in a herbarium packet. It represents very well the species as the writer has come to know it in the eastern United States (plate 19, figure 1). Two other sheets of specimens are contained in the same folder and there is also one small box of specimens. In another folder are the original collections representing varieties recognized by Peck. All but one are from the wood of coniferous trees, either spruce or pine. Apparently these are all the labeled collections in Peck's herbarium, though it is such a common species that a search through the undetermined material would probably yield as many more collections. Recent material collected in abundance by Weir in the northwest and referred to this species shows a considerable range of variation not exhibited by eastern collections. These western forms will be discussed separately later, as some might not agree with Doctor Weir and the writer as to their identity.

The largest specimens of the type collection are 10 cm long and about 7 cm broad. Other eastern collections sometimes show a much greater expanse of growth. The color of the hymenial surface is pinkish buff to avellaneous in herbarium specimens but fresh specimens are often white or whitish, becoming darker when bruised. Peck states that it is separable from the matrix, but this is true only when growing on a rather smooth surface. Such specimens when separated have a peculiar appearance to the contact surface, which seems more or less characteristic of such forms. When so separated and dried, specimens curl badly and become rather hard and rigid. But when growing on an uneven surface such as the bark of a tree, it is impossible to separate the fungus in entirety from the substratum.

Younger specimens have a conspicuous, sterile, tomentose margin sometimes 5 to 6 mm broad. This becomes narrower as specimens mature and in rare cases entirely disappears. Usually it persists to some extent and where the entire expanse of growth is present in specimens it is easily seen. This border is fairly even, not at all fimbriate, and is somewhat lighter in color than the hymenial surface. The thickness of the specimens of an eastern origin varies considerably, being from one-half of a millimeter to 6 mm. Based on the thinnest of such forms, Peck described the variety *tenuis* (plate 21, figure 6). Of this thickness the major part is composed of the tube lengths. The subiculum is rather thin and in mature specimens often nearly extinct. The tubes vary from one-half of a millimeter to 6 mm in length, the latter measurements sometimes attained where the tubes are in an oblique position. In well-formed specimens their lengths run from 2 to 4 mm in eastern collections. The mouths of the tubes are rounded or slightly angular, averaging 3 to a millimeter. The walls of the dissepiments are rather thin but entire. Most often there is no sheen or silkiness to the hymenium but in some few specimens considerable luster is developed.

The spores are ellipsoidal sometimes markedly oblong-ellipsoidal or ovoid, some with an oblique apiculus (plate 20, figure 7), hyaline, 4.5 to 6 μ long, and 2.5 to 3.5 μ broad. The cystidia vary considerably and the structures so referred may not be true cystidia at all. Sometimes they are scarcely more prominent than basidia and such are to be distinguished only by their pointed apex. At other times they are quite conspicuous, two or three times thicker than the basidia and with a rounded, swollen apex, or swollen toward the top but the apex itself blunt pointed. These structures are represented in the illustration, plate 20, figures 3, 4. Their size varies from 15 to 20 μ long and 5 to 7 μ in diameter at the thickest part in the larger forms. They appear to occur constantly in the type specimens and in most other collections examined. The hyphae of the trama are compactly arranged and their diameter varies from 2 to 5 μ. They are simple or only rarely branched and as far as revealed by the ordinary powers of the microscope no cross walls are present and no clamp connections. The hyphae of the subiculum are often considerably larger (4 to 7 μ) but in other respects they do not differ from those of the trama (plate 20, figures 5 and 6). Many of the hyphae from both regions have quite thick walls similar to those in the hyphae of P. indurata. Irregular crystals are usually abundant on and in the hymenium.

The affinities of the species are with such as Poria pulchella, Poria medullapanis and Poria ornata. From the last mentioned it appears to differ constantly in the much greater diameter of the hyphae, which in those two species (as interpreted by the writer) are only 1 to 3 μ in diameter and considerably branched. The hyphae of P. pulchella appear to be intermediate in diameter between those of these species. There are differences of appearance, however, hard to describe, which have so far enabled the writer to separate these two species.

The substratum is nearly always a coniferous log, though Peck himself collected it (var. *stalactiticus*) (plate 19, figure 2) on birch logs, and the writer has several collections from different deciduous hosts.

Two other varieties were described by Peck (see var. *tenuis* also above): Var. *tuberculosa* with the surface roughened by unequal prominent tubercles (plate 19, figure 4) and var. *vesiculosa* "with shallow scattered pores as if formed from ruptured vesicles" (plate 19, figure 3). All these appear to belong to the species and probably represent isolated occurrences of anomalous forms owing their existence to abnormalities of growth or affected by the nature of the substratum on which they grew.

Peck noted a strong subacid odor to fresh specimens of the species. This has not been noted by the writer and no mention is made by various careful collectors who have sent in material of the species.

Through the kindness of Dr J. R. Weir, of Missoula, Montana, the writer has had the opportunity of examining a large series of collections of a western species sent for determination. At first these were referred to P. pulchella by the writer. After examination of a larger series of specimens the writer identified certain collections with P. subacida. Further correspondence with Doctor Weir gave undoubted indications that a much larger number of the collections should be so referred, and a more recent comparison verifies the opinion. These western specimens differ from those of eastern collections in a few particulars, and in the absence of connecting forms would hardly be referred to the same species. The chief difference is in the thickness of the fructification. Specimens more than 1 cm thick are not unusual, and Doctor Weir states that specimens an inch or more in thickness are sometimes found. Such specimens are of course perennial. This condition is not much different from that often shown by P. pulchella, where some specimens are quite thin, and others 1 cm or more thick. The color is somewhat different in these forms, with more yellow in young specimens and with thicker and older specimens of a smoke gray color.

Redescription (based on eastern collections only). Annual, effused from a few centimeters to a foot or more, separable or on uneven surfaces more unseparable, with a light-colored, sterile, tomentose margin, 5 to 6 mm broad or narrower in mature specimens; subiculum thin, white, not conspicuous; tubes when well developed 2 to 4 mm long, longer in oblique positions, shorter at times, their mouths whitish or light yellow, darker when bruised and pinkish buff to avellaneous in herbarium specimens, rounded or somewhat angular in outline, averaging 3 to 3½ to a millimeter, the dissepiments rather thin but entire; spores ellipsoidal or oblong ellipsoidal, smooth, hyaline, sometimes obliquely apiculate, 4.5 to 6 x 2.5 to 4 μ; cystidia represented by small sterile organs, usually clavately thickened at apex or thickened above but with a blunt-pointed apex, 5 to 7 μ in diameter; tramal tissue of rather closely compacted hyaline hyphae, unbranched, apparently without cross walls or clamp connections, 4 to 6 μ in diameter.

On wood of coniferous trees, especially spruce; more rarely on wood of deciduous trees.

Type locality: Osceola, N. Y. C. H. Peck. Frequent in the northeastern United States and perhaps widely distributed across the northern half of the country.

Poria subiculosa (Peck) Cooke

Plate 21, figures 1–5

Grevillea, 14: 114. 1886

Polyporus (Resupinati) subiculosus Peck, 31st Rep't N. Y. State Mus., p. 37. 1879

Original description. Subiculum widely effused, dense, but soft and downy tomentose, tawny, cinnamon; pores forming patches upon the subiculum, short, unequal, sometimes slightly labyrinthiform, cinereo-ferruginous, ferruginous-brown when bruised, the dissepiments when young whitish and pruinose-villose.

Creeping over mosses, decaying wood, and even stones, in sheltered places. Copake. Oct.

The patches are several inches in extent. The pores have a paler hue than the subiculum, but they become darker when bruised.

Notes. This anomalous species is well represented on the type sheet though the material is not abundant. A second collection is preserved in a herbarium box. The largest specimen is about 9 cm long and 6 cm broad. A dense, soft subiculum is first formed over the surface of the substratum and upon this the pores later develop (plate 21, figure 1). The color of the mature hymenial surface is wood brown to cinnamon or near ochraceous tawny. In consistency even the dried plants are soft and coriaceous. A wide, sterile, subiculose margin (frequently as much as 3 cm broad) often surrounds the hymenium. The color of this is clay color to ochraceous tawny or buckthorn brown and it is extremely soft and feltlike. The thickness of the hymenium-producing portion is 2 to 4 mm, of which the subiculum sometimes represents as much as half. This latter is soft and feltlike and brown in color. The tubes are 1 to 2 mm long. Their mouths are angular, irregular or slightly daedaloid and measure 1 to 2.5 to a millimeter. The dissepiments are at maturity rather thin and entire or slightly denticulate. There is no sheen or silkiness to the hymenium.

The spores are broadly ovoid or broadly ellipsoidal to subglobose, hyaline and measure 5 to 7 by 3 to 5 μ (plate 21, figure 5). There are no cystidia (plate 21, figure 2). The hyphae are of two general sizes. Those of the sterile subiculum are the larger and are heavy-walled, brown in color and with evident cross walls and little or no branchings (plate 21, figure 4). Their diameter is 5 to 7 μ. Those of the trama are considerably smaller, 3 to 6 μ in diameter. Some of these are brown and a few are nearly or quite colorless. Branching is more frequently found in these than in the hyphae of the subiculum, and cross walls are not uncommon (plate 21, figure 3). These hyphae are more flexuous and somewhat thinner walled than those in the subiculum.

The species apparently has no near relatives that are at all common in this country. A collection has been recently received from E. T. Harper, collected on an arbor vitae log at Neebish, Michigan, October 1917. This specimen has persisted for three years, forming a new layer of tubes each year. Lloyd reports (letter no. 63, p. 16) a collection from Wisconsin by Dr C. J. Humphrey.

Redescription. Annual or reviving for two or three years, easily separating, effused for several centimeters, general color brown; consisting at first of a soft brown subiculum on which pores are developed; subiculose margin broad, sterile, feltlike, clay color to ochraceous tawny; subiculum conspicuous, brown, up to 2 mm thick, soft and floccose; tubes 1 to 2 mm long, their mouths near cinnamon or ochraceous tawny, angular to irregular or slightly daedaloid, averaging 1 to 2.5 to a millimeter, with rather thin and entire or denticulate dissepiments; spores broadly ovoid to broadly ellipsoidal or subglobose, hyaline, 5 to 7 x 3 to 5 μ; cystidia none; hyphae of margin thick-walled, brown, 5 to 7 μ in diameter, simple, cross walls rather numerous, no clamp connections; hyphae of trama more flexuous, brown or sometimes hyaline, 2.5 to 5 μ in diameter, otherwise as above.

Creeping over mosses, decayed wood, etc.

Type locality: Copake, N. Y. C. H. Peck. Also collected by Peck at Freeport, N. Y., and by E. T. Harper at Neebish, Mich.

Poria sulphurella (Peck) Sacc.

Plate 22, figures 1–5

Syll. Fung., 9: 190. 1891

Polyporus sulphurellus Peck, 42d Rep't N. Y. State Mus., p. 123 (Bot. ed., p. 27). 1889

Original description. Resupinate, effused, very thin, following the inequalities of the matrix, subiculum and margin downy, white; pores very short, minute, rotund, very pale yellow, often with a slight salmon tint, the dissepiments obtuse.

Dead bark of poplar, Catskill mountains. Sept.

Notes. The type material of this species is somewhat scanty, consisting of four small specimens on bark and mounted on a herbarium sheet. The name should not be confused with Daedalea sulphurella Peck, a resupinate species described later in this paper, and thought by Peck to have affinities with the genus Daedalea. In view of the fact that both species are resupinate it would have been better had the Daedalea species been given another name.

The largest piece of bark bearing the type specimens is about 9 cm long and 3 cm broad but less than half of its surface is covered by the fungus (plate 22, figure 1). The color of the hymenial surface is at present light buff or pinkish buff. At first the fructifications are surrounded by a narrow, very thin, sterile, pubescent border which may in part disappear as the plants mature. The thickness of the mature fruiting portion is only about three-fourths of a millimeter in the thickest parts, and in places is considerably thinner. Of this thickness the larger part is made up of tube lengths, the subiculum being very thin and nearly invisible. The mouths of the tubes are rounded and even in the most mature specimens, and average 5 to 6 to a millimeter. The dissepiments are nearly as thick as the diameter of the tubes, and except in the more mature specimens are very finely pubescent. They are very regular and entire. There is no sheen or silkiness to the hymenium.

The spores are short cylindric and for the most part curved. They are colorless and 3 to 5 μ long by 1 to 2 μ broad (plate 22, figure 5). They are not abundant in the specimens but are not hard to find both free floating and on basidia. There are no cystidia in the hymenium (plate 22, figure 2). The trama is not very compact and is composed of hyaline, thin-walled hyphae that are usually quite flexuous and more or less branched (plate 22, figure 4).

Few cross walls and clamp connections are recognizable on these hyphae. The hyphae of the sterile margin and subiculum are somewhat different, being long and straight, simple or infrequently branched, and with abundant and conspicuous clamp connections (plate 22, figure 3). Cross walls are apparent only where clamp connections are present. The diameter of both types of hyphae is quite small, up to 2.5 μ.

In general appearance the species bears some resemblance to Poria semitincta and to resupinate forms of Polyporus semipileatus Peck. But from both it differs in the much smaller diameter of the hyphae, and from the former also in the considerably smaller tubes.

Redescription. Effused for several centimeters, annual, separable (?), very thin, light of color, with a narrow, sterile pubescent, white margin at least when young; subiculum very thin and inconspicuous, white; tubes up to .75 mm in length, their mouths light buff or pinkish buff, rounded, averaging 5 to 6 to a millimeter, the dissepiments relatively thick, slightly pubescent when young, quite even and entire; spores cylindric or allantoid, hyaline, 3 to 5 x 1 to 2 μ; cystidia none; trama of loosely arranged, hyaline, thin-walled, flexuous hyphae, sometimes branched, cross walls and clamp connections not often apparent; subiculum hyphae straight, simple, with conspicuous clamp connections at the cross walls; diameter of both types 1 to 2.5 μ.

On dead bark of poplar.

Type locality: Catskill mountains, N. Y. C. H. Peck. Not otherwise known to the writer.

Daedalea sulphurella Peck

Plate 23

44th Rep't N. Y. State Mus., p. 21. 1891

Original description. Resupinate, effused or nodulose, pale sulphur-yellow; pores short, labyrinthiform, the dissepiments often lacerated and irpiciform in the dry plant; spores subglobose or broadly elliptical, .0002 in. long.

Much decayed wood. Salamanca. September.

Mostly very irregular or nodulose, following the irregularities of the wood and encrusting mosses. It is of a beautiful pale yellow color when fresh, but it changes to a dull pallid hue when dry.

Notes. This is an extremely unsatisfactory species from the standpoint of the type collection, and no other material is available. In the box of type specimens are many small bits of rotten wood some of which are covered by the fungus that for the most part one would hardly refer to the pore fungi at all. There are only a few small pieces that show the nature of the hymenium. The fragments that are mature suggest an Irpex (Hydnaceae) rather than a Daedalea, and in some specimens there project isolated rounded teeth from the substratum. The writer is inclined to believe that the fungus does not belong in this group, but since it was so described by Peck it will be presented here.

The largest fragments of fruiting bodies are scarcely more than 1 cm broad, but some fragments showing no hymenial configuration are somewhat larger. These last mentioned have the appearance of a species of Corticium (plate 23, figure 1). The color of the fungus is now pinkish buff or cinnamon buff all over, but was described by Peck as sulphur yellow in the fresh plant. The surface of the fructification is very uneven, following the inequalities of the wood. The thickness of the fungus, including the length of the teethlike projections, is not more than a millimeter, and where no teeth are present it is extremely thin. The spore-producing layer covers the surface of what appear to be platelike teeth or in some cases awl-shaped projections. These teeth are for the most part connected at the base as in Irpex, or as might happen if the dissepiments were much torn or split. The presence of isolated teeth, however, seems to favor the idea that the proper place for the species is among the Hydnaceae. The fungus was growing in part on a vertical substratum which would exaggerate the sinuous character of the hymenium.

Some parts of the fungus are mature and spores are produced in abundance. These are broadly ellipsoidal or globose, hyaline, and measure 4 to 6 μ in globose forms. The ellipsoidal spores are 5 to 6 μ long and 4 to 5 μ broad (plate 23, figure 4). Often a slight apiculus is visible, and frequently the spore contains a large hyaline oil globule that practically fills it. The basidia are 5 to 6 μ in diameter. The trama and subiculum are fairly compact and composed of colorless thin-walled hyphae that are 2.5 to 6 μ in diameter. They are much branched and cross walls are rather conspicuous and fairly abundant. A large percentage of these walls have clamp connections, but not all of them (plate 23, figure 3).

As stated above, the affinities of the species are in doubt and its true character can never be determined until more material is collected.

Redescription. Effused, quite irregular and sometimes nodulose, thin and annual; hymenium covering the surface of configurations originally described as labyrinthiform pores but appearing in dried plants more as teeth, isolated and terete or flattened and connected at the base, pale sulphur-yellow (fide Peck) in fresh specimens, uniformly pinkish buff or cinnamon buff in dried plants, not more than 1 mm long; spores broadly ellipsoidal or globose, hyaline, 5 to 6 x 4 to 5 μ or 4 to 6 μ in diameter; trama and subiculum compact, of thin-walled, hyaline, much branched hyphae, 2.5 to 6 μ in diameter, with evident cross walls and frequent clamp connections.

On rotten wood.

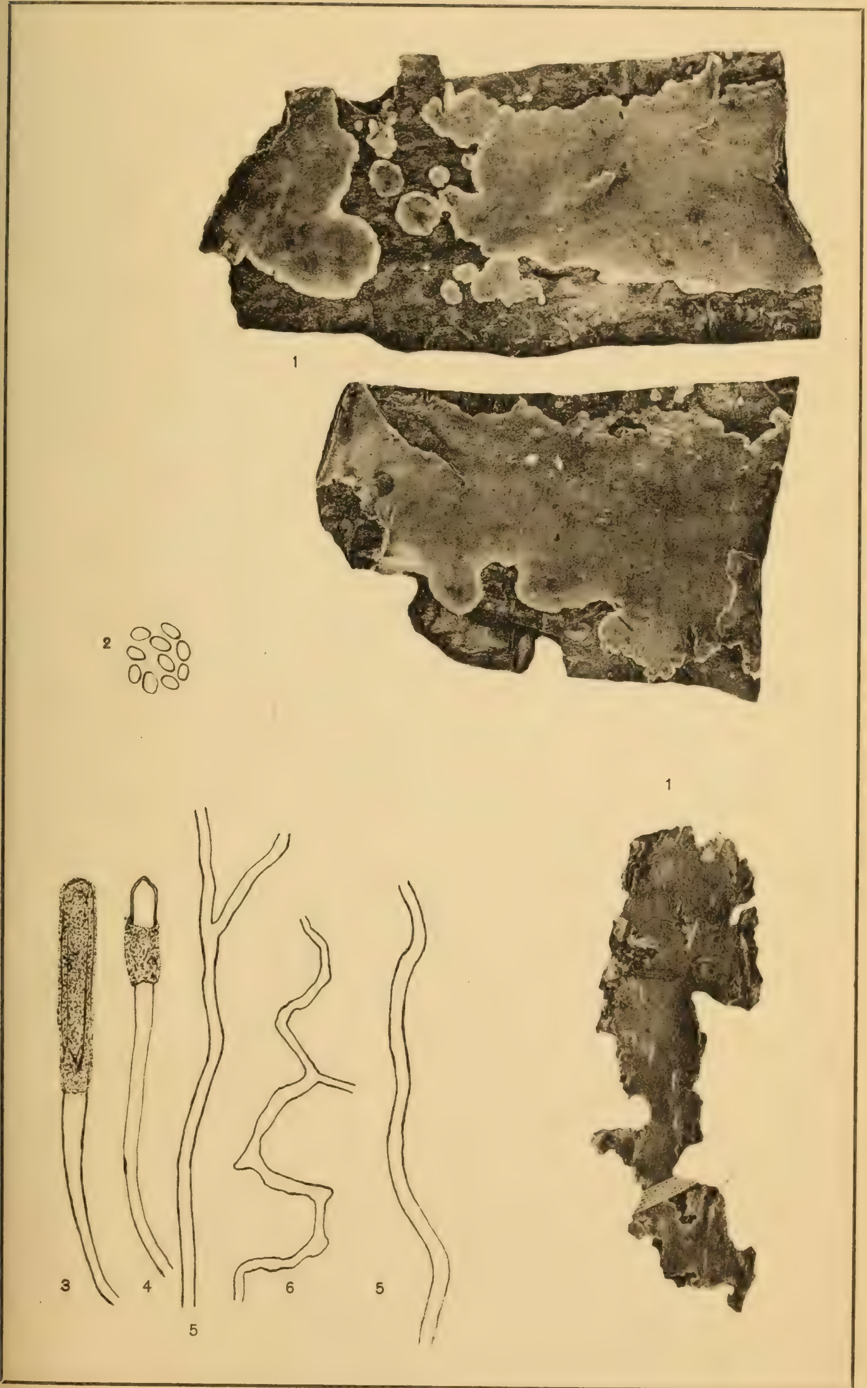
Type locality: Salamanca, N. Y. C. H. Peck. Not otherwise known to the writer.

EXPLANATION OF PLATES

Plate 1

Poris attenuata (*Peck*) *Sacc.*

1 Mature and typical plants from Westport, N. Y. In the New York State herbarium. x 1.
2 Mature spores.
3 A single cystidium showing how these bodies are formed by the enlargement and the encrusting of the ends of hyphae. From teased preparations.
4 A cystidium with part of encrustation removed.
5 Hyphae from the subiculum and the trama.
6 More irregular hypha occasionally found in the trama.
7 Portion of the type collection of this species. x 1.



PORIA ATTENUATA (Peck) Sacc.

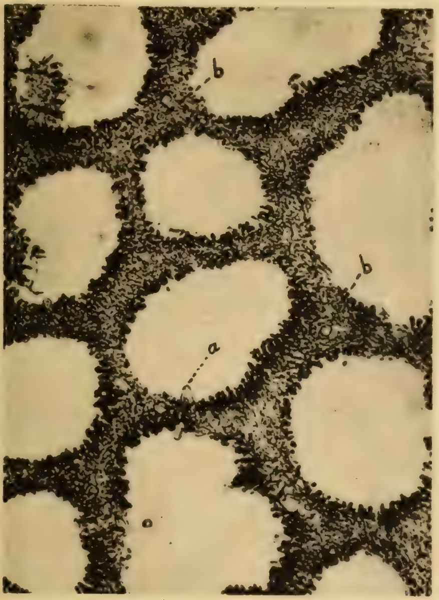
Plate 2

Poria attenuata *(Peck) Sacc.*

1 Microphotograph of cross section of the hymenium, x 160.
  a Projecting cystidium.
  b Cross section of a cystidium embedded in the trama.
2 Vertical section of a part of a single tube showing obliquely projecting cystidia. x 320.

Poria attenuata var. subincarnata *Peck*

3 Fragments from specimens in the type collection. x 1.
4 Mature spores.
5 Encrusted hypha from the subiculum on the growing margin of one specimen.
6 Unencrusted hyphae as found in the trama and sometimes the subiculum.



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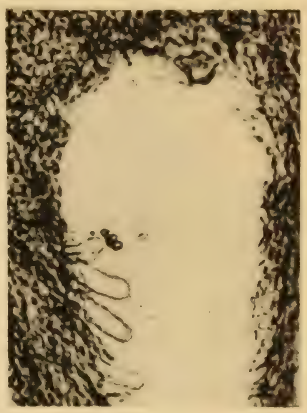

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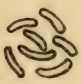

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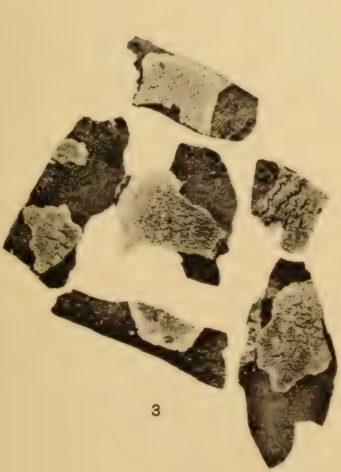

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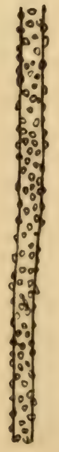

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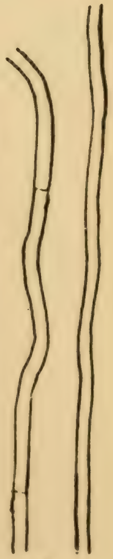

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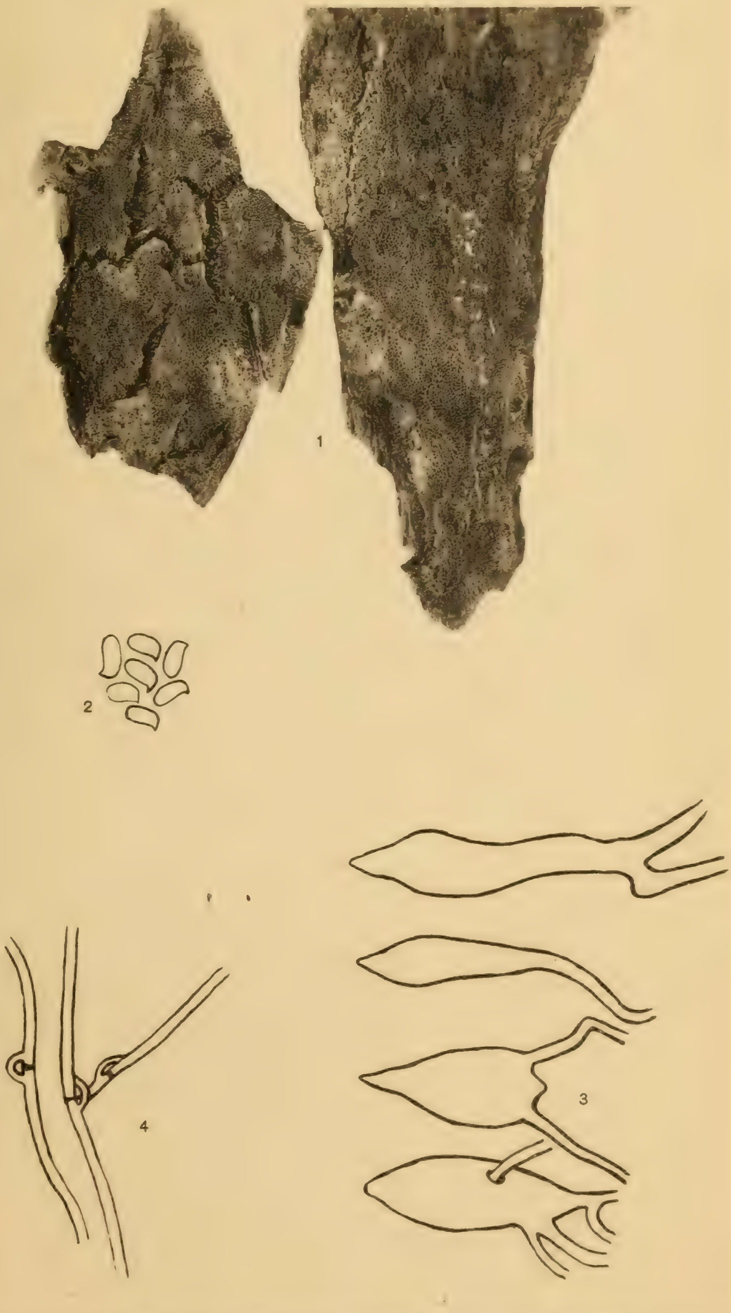
Fig. 1-2 PORIA ATTENUATA (Peck) Sacc.
Fig. 3-6 PORIA ATTENUATA var. SUBINCARNATA Peck

Plate 3

Poria aurea *Peck*

1 Specimens from the type collection. x 1.
2 Mature spores.
3 Various forms of cystidia found in the hymenium.
4 Hyphae from the trama and the subiculum.



PORIA AUREA Peck

Plate 4

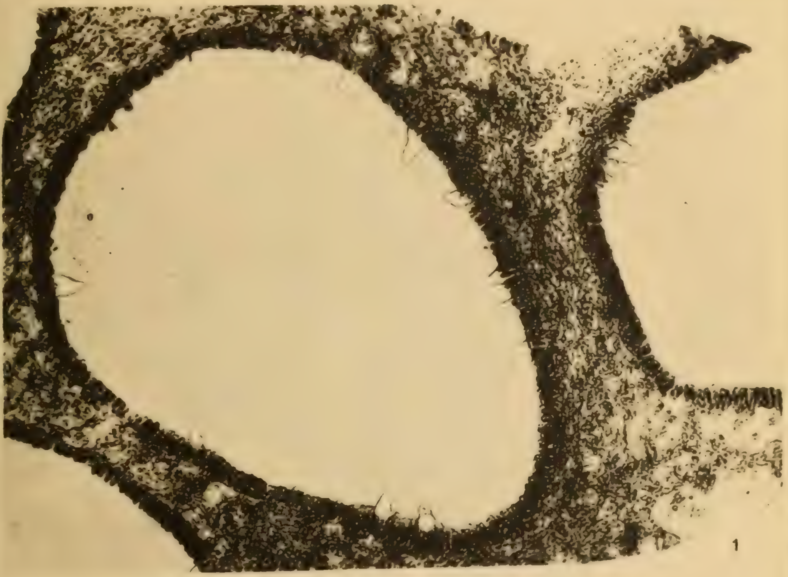
Poria aurea *Peck*

1 Microphotograph of cross section of the hymenium, showing numerous projecting cystidia. x 160.

2 Small portion of the hymenium of figure 1 enlarged to show cystidia. x 320.

Poria fimbriatella *(Peck) Sacc.*

3 Specimen in the herbarium New York State Museum, from Ampersand pond, N. Y. x 1.



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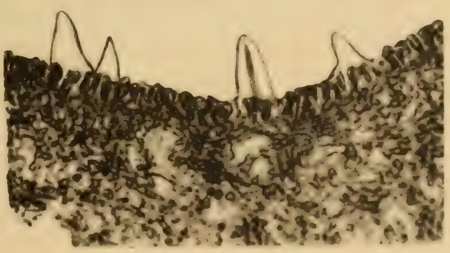

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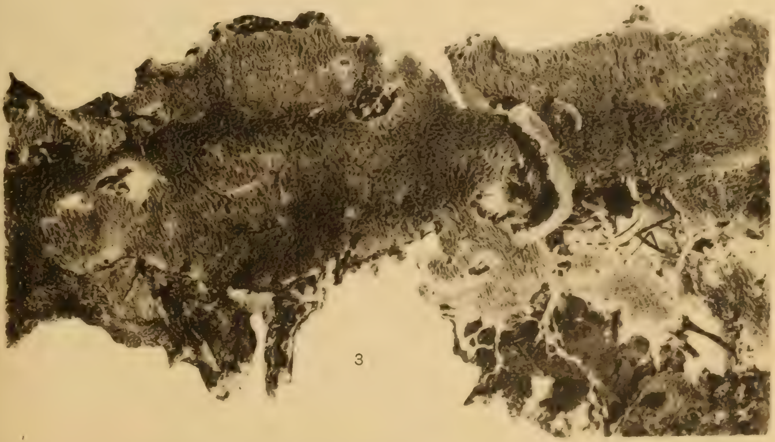

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Fig. 1-2 PORIA AUREA Peck
Fig. 3 PORIA FIMBRIATELLA (Peck) Sacc.

Plate 5

Poria fimbriatella *(Peck) Sacc.*

1 Microphotograph of cross section through hymenium, showing projecting cystidia. x 160.

2 Portion of a cross section of hymenium enlarged to show cystidia. x 320.

3 Hyphae from the trama.

4 Hyphae from the subiculum.

5 Cystidium from the hymenium of the type collection.

6 Cystidium from the hymenium of the collection from Ampersand pond, N. Y.

7 Mature spores.

(See also plate 22, figure 6, for specimen from the type collection).

Poria griseoalba *(Peck) Sacc.*

8 Specimens from the type collection. x 1.

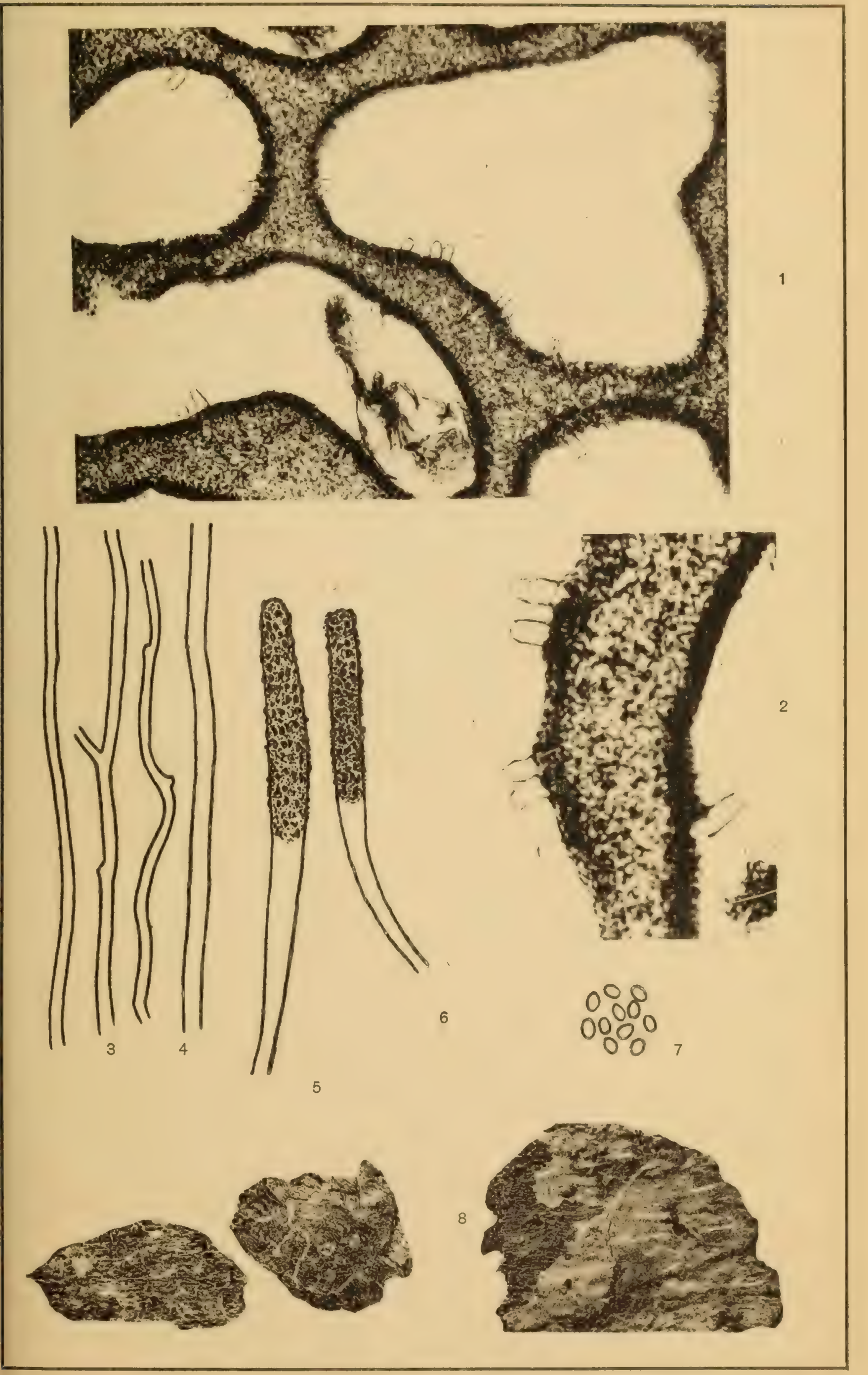


Fig. 1-7 PORIA FIMBRIATELLA (Peck) Sacc.
Fig. 8 PORIA GRISEOALBA (Peck) Sacc.

Plate 6

Poria griseoalba *(Peck) Sacc.*

1 Encrusted hypha from the subiculum.

2 Hypha from the trama, showing the origin of the basidia. See text.

3 Anastomosing hyphae from the subiculum.

4 Microphotograph of cross section of the hymenium. x 160.

5 Mature spores.

Polyporus induratus *Peck*

6 Specimens in the type collection. x 1.

7 Hypha from specimens in type collection.

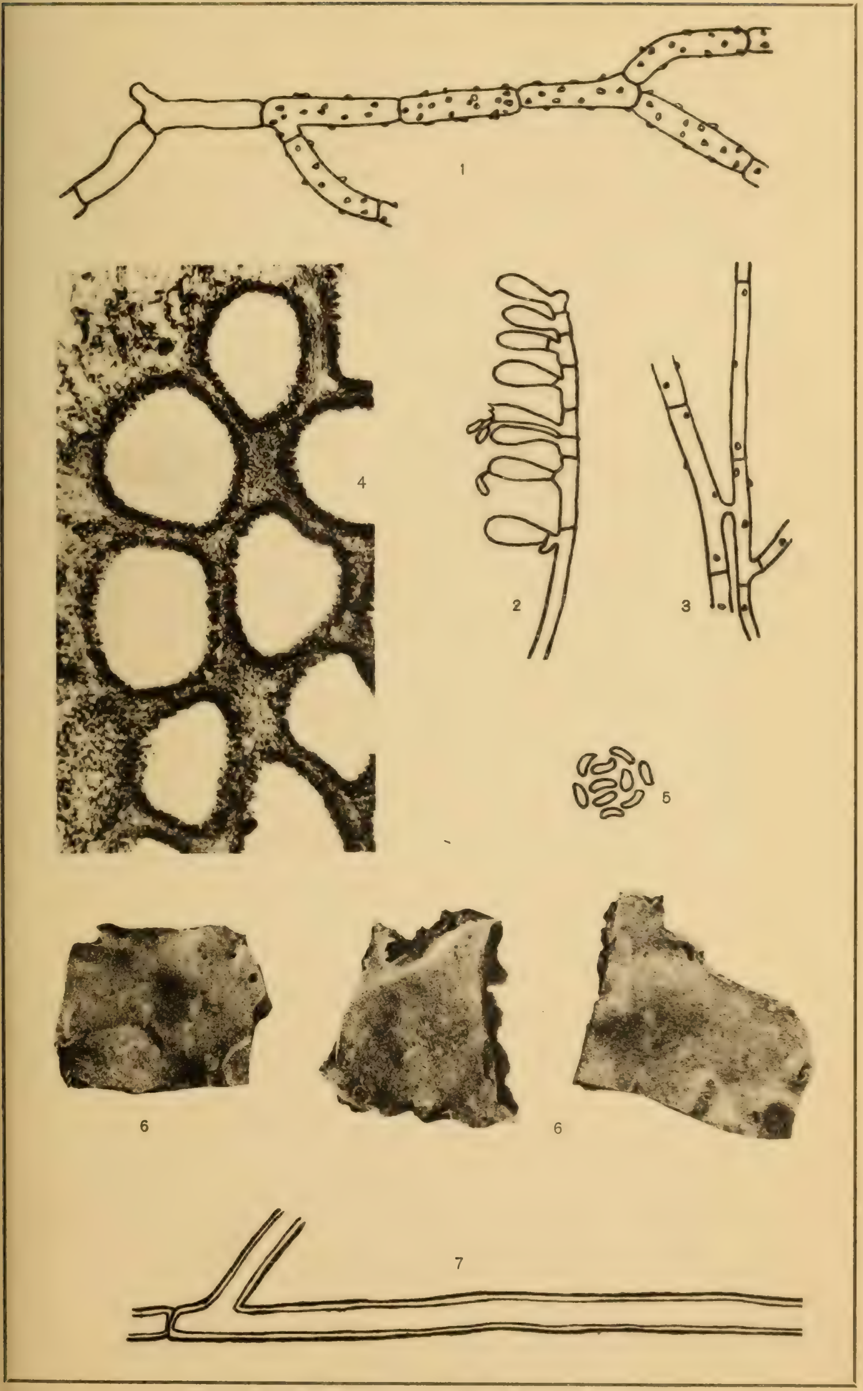


Fig. 1-5 PORIA GRISEOALBA (Peck) Sacc.
Fig. 6-7 POLYPORUS INDURATUS Peck

Plate 7

Polyporus induratus *Peck*

1 Cross section of the hymenium from specimens in the type collection. x 160.

2 Small portion of the trama as seen in cross section and enlarged. x 320.

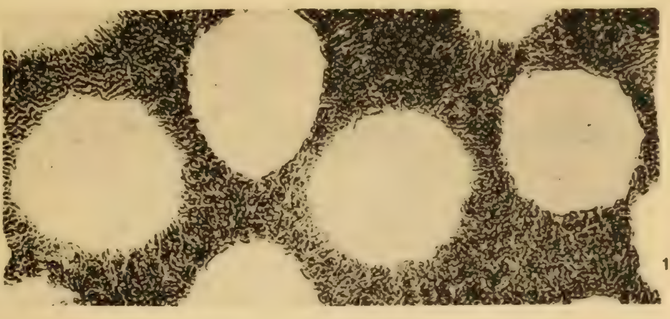
3 Enlarged lateral view of a vertical section through one of the specimens in the type collection. Made with Bausch and Lomb Micro-Tessar lens. x 10.

Poria laetifica *(Peck) Sacc.*

4 Specimen from the herbarium of L. O. Overholts, no. 3431.

5 Hyphae from the trama and the subiculum.

6 Mature spores from collection in herbarium of L. O. Overholts, no. 3431.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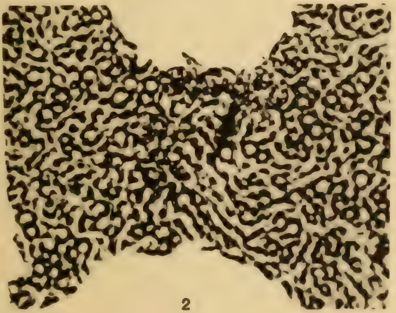
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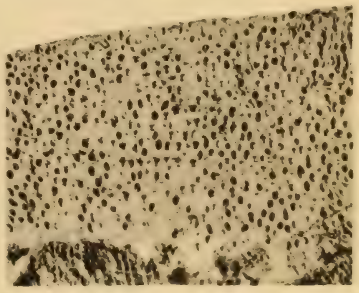

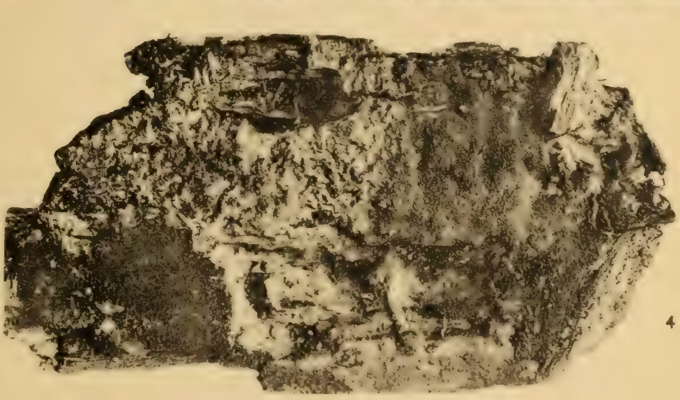
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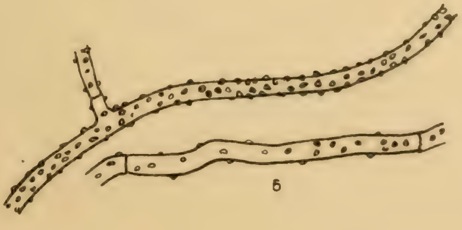
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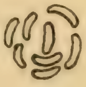
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Fig. 1-3 POLYPORUS INDURATUS Peck
Fig. 4-6 PORIA LAETIFICA (Peck) Sacc.

Plate 8

Poria laetifica *(Peck) Sacc.*

1 Photograph of specimen from the type material. x 1.

2 Microphotograph of cross section of the hymenium. x 160.

Poria macouni *(Peck)*

3 Photograph of the single specimen in the type collection. x 1.

4 Hyphae from the trama and the subiculum.

5 Mature spores.

6 Microphotograph of cross section of the hymenium showing prominent setae. x 160.

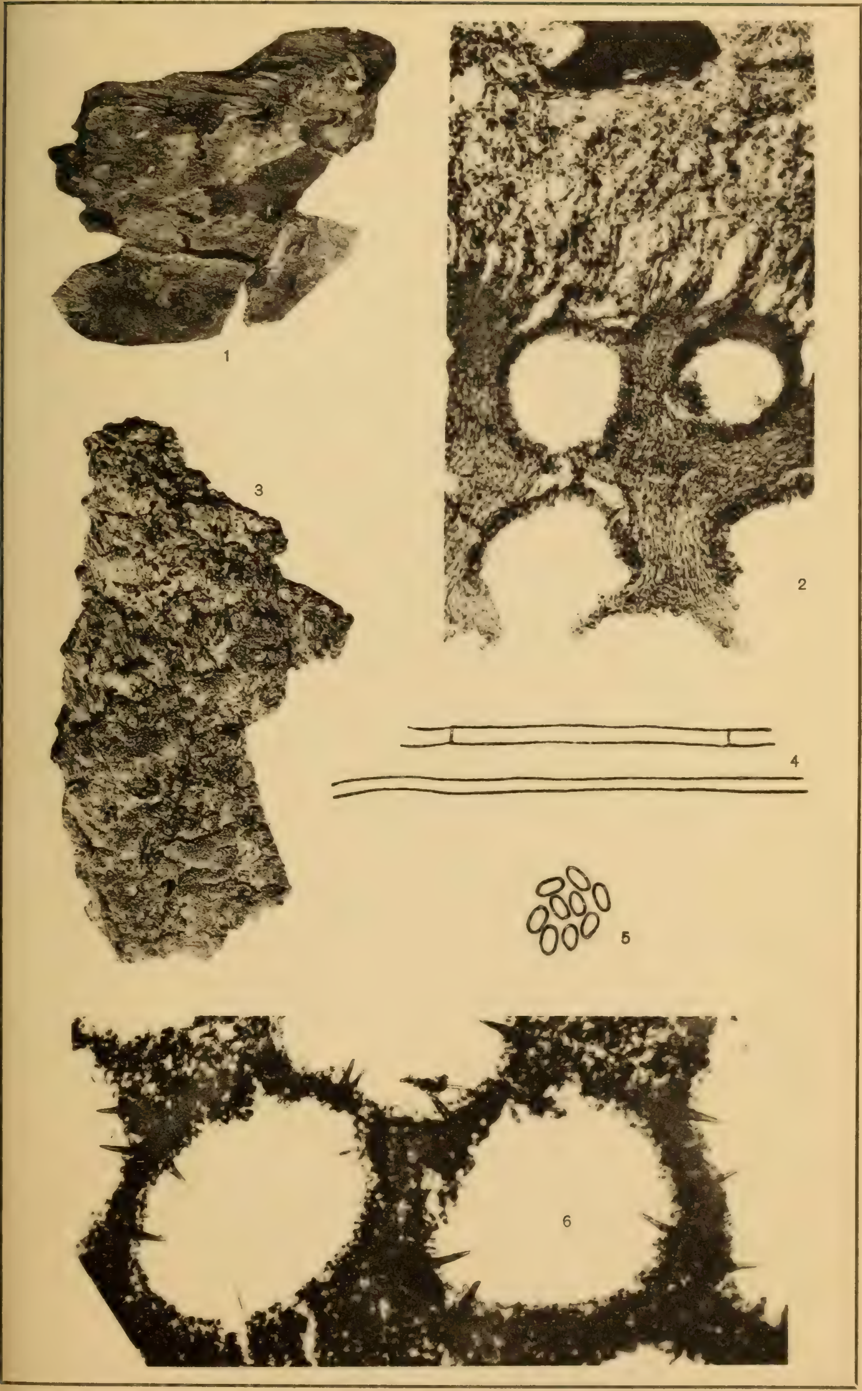


Fig. 1-2 PORIA LAETIFICA (Peck) Sacc.
Fig. 3-6 PORIA MACOUNI (Peck) Overholts

Plate 9

Poria marginella *(Peck) Sacc.*

1 Specimens from the type collection. x 1.

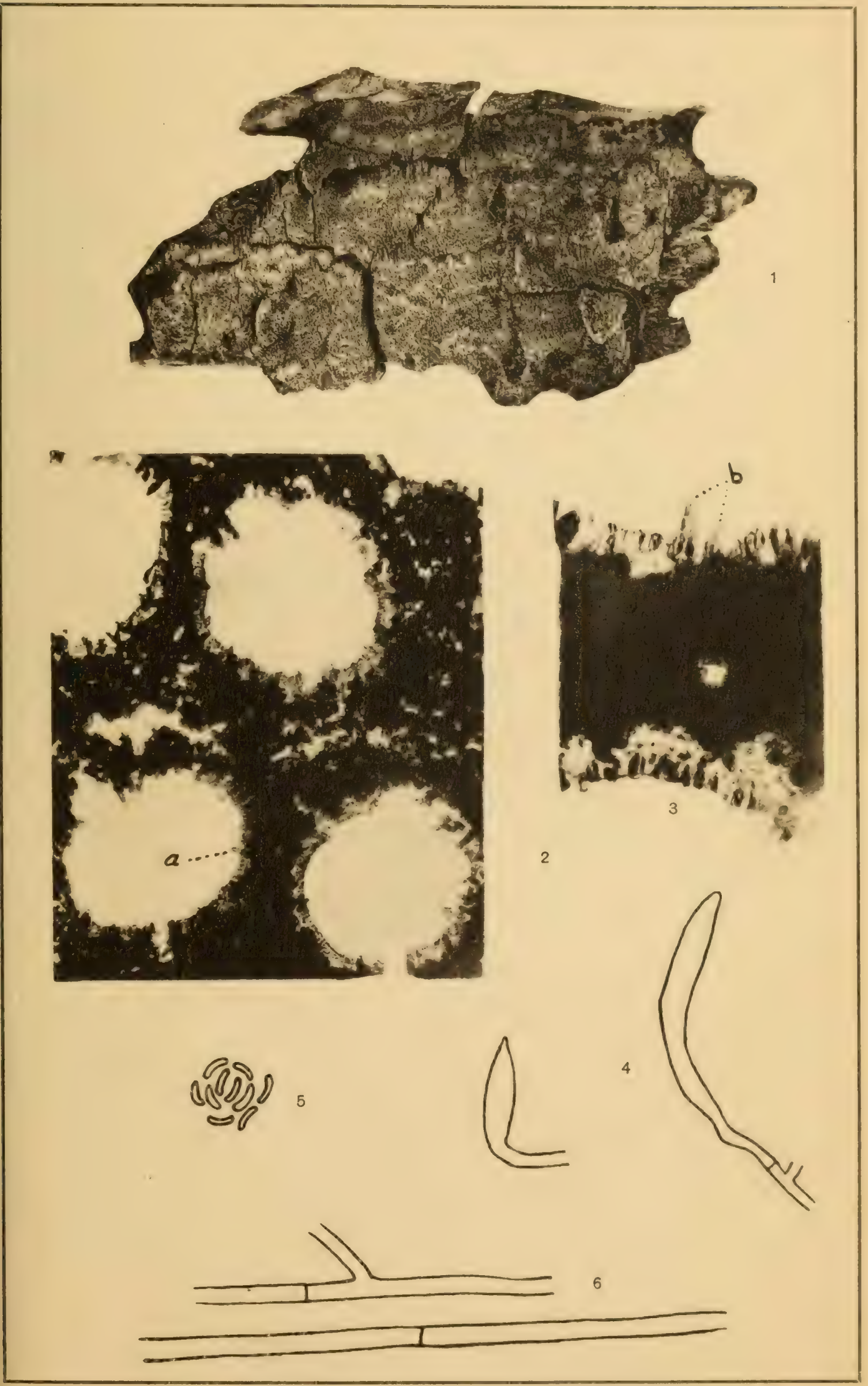
2 Microphotograph of cross section of the hymenium showing setae, as at *a*. x 160.

3 Small section of the hymenium enlarged to show setae, *b*. x 320.

4 Setae from the hymenium, as obtained in crushed preparations.

5 Mature spores.

6 Hyphae from the subiculum and the trama.



PORIA MARGINELLA (Peck) Sacc.

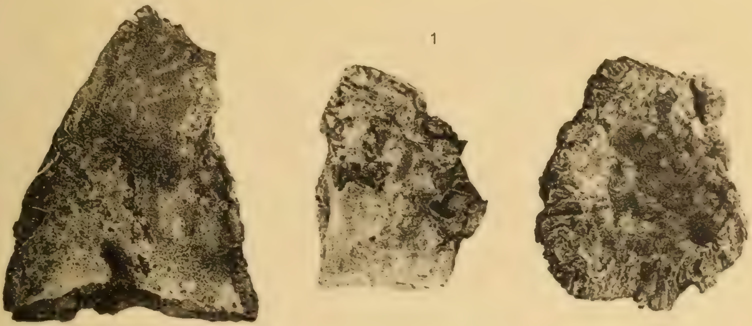
Plate 10

Poria mutans *(Peck) Sacc.*

1 Specimens from the type collection. x 1.
2 Mature spores.
3 Hyphae from the subiculum and the trama.
4 Microphotograph of cross section of the hymenium. x 160.

Poria mutans var. tenuis *Peck*

5 Specimens from the type collection. x 1.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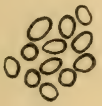
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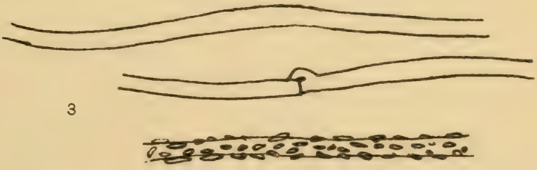
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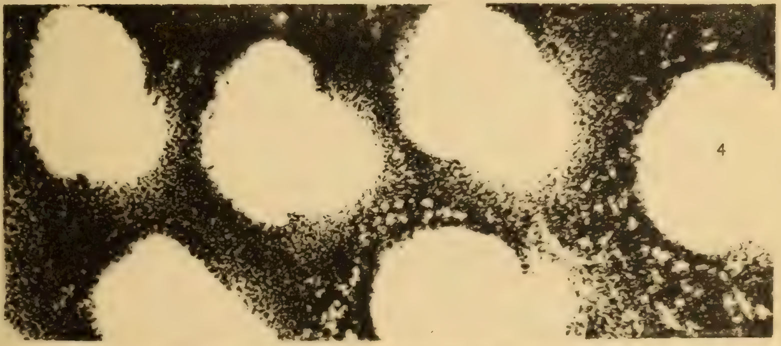
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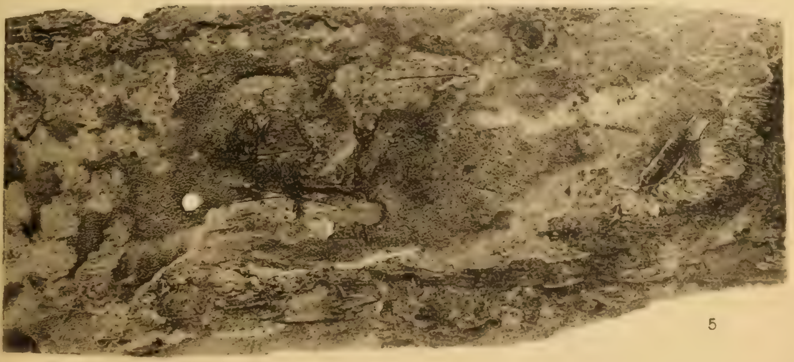
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Fig. 1-4 PORIA MUTANS (Peck) Sacc.
Fig. 5 PORIA MUTANS var. TENUIS Peck

Plate 11

Poria mutans var. tenuis *Peck*

1 Microphotograph of vertical section through the hymenium. x 160.

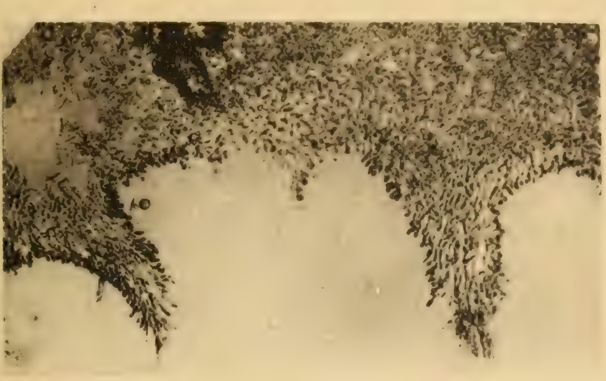
2 Spores found free-floating in sectional preparations (see text).

3 Encrusted hyphae from the subiculum.

4 Hyphae from the trama.

Poria myceliosa *Peck*

5 Specimen from the type collection. x 1.



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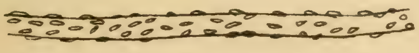

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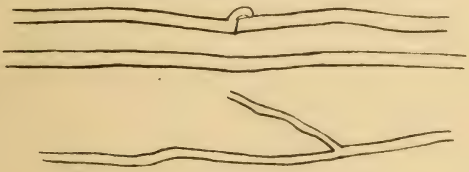

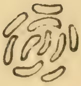

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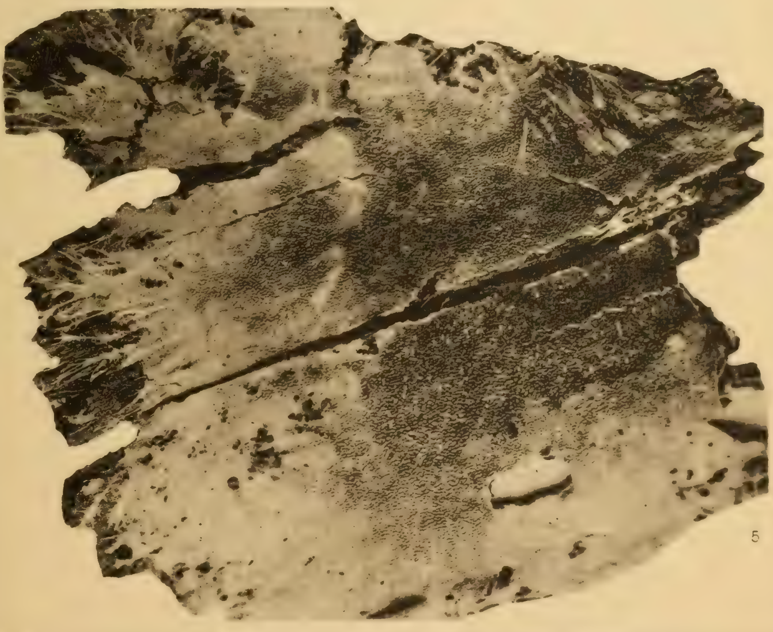

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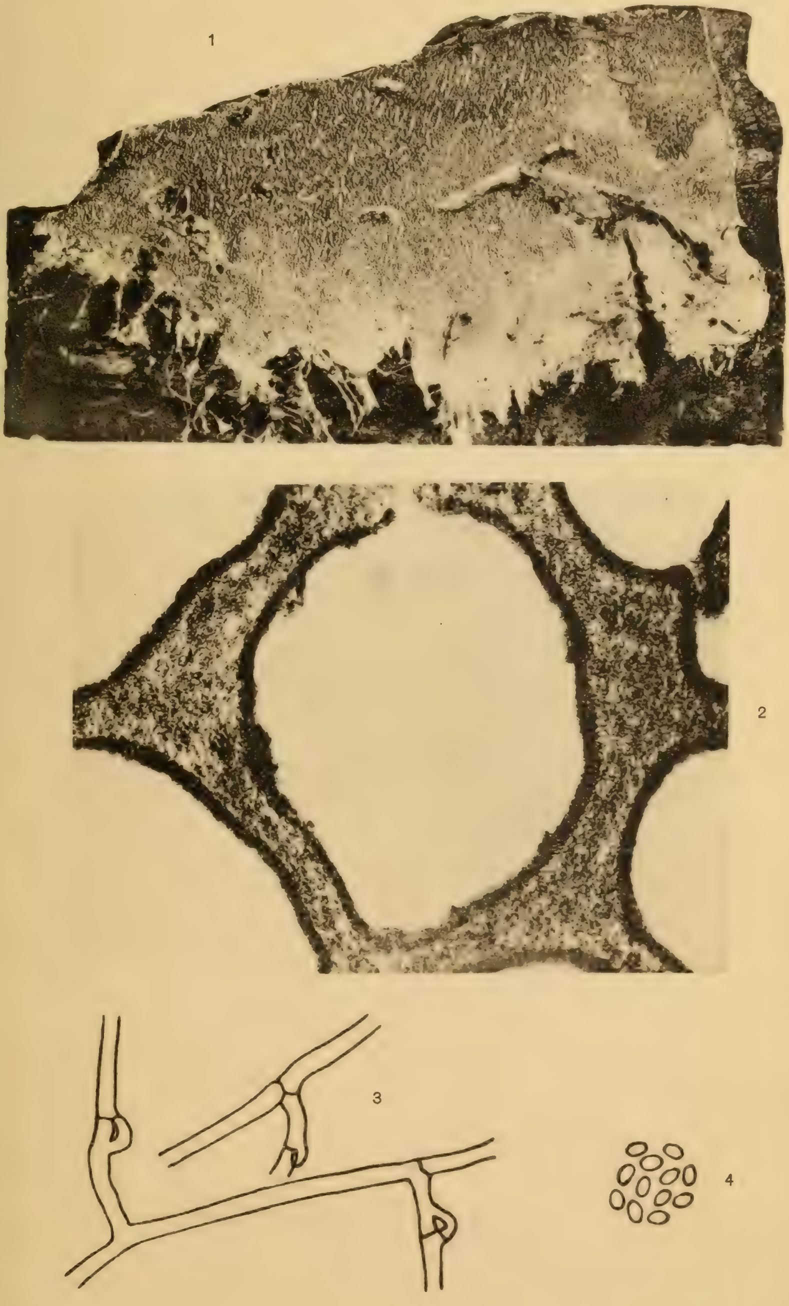
Fig. 1-4 PORIA MUTANS var. TENUIS Peck
Fig. 5 PORIA MYCELIOSA Peck

Plate 12

Poria myceliosa *Peck*

1 Photograph of specimen from the type collection. x 1.
2 Microphotograph of cross section of the hymenium. x 160.
3 Hyphae from the trama and the subiculum.
4 Mature spores.

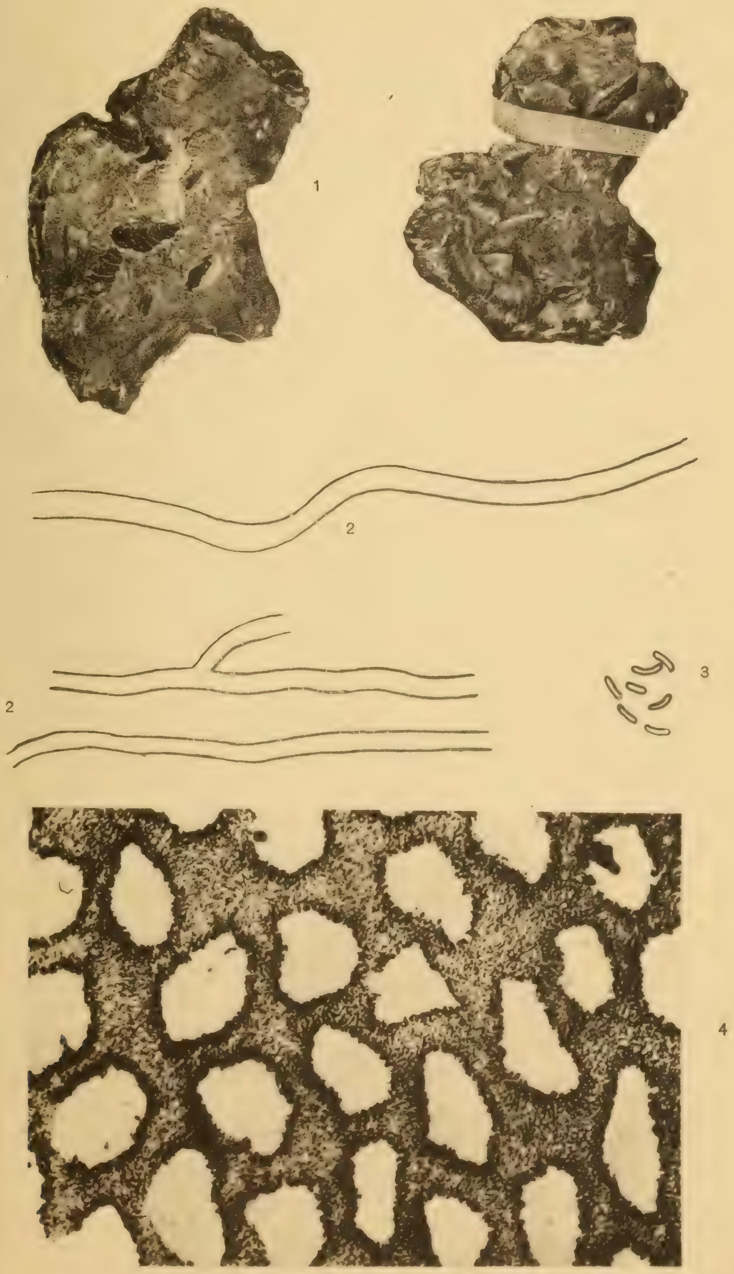


PORIA MYCELIOSA Peck

Plate 13

Poria odora *(Peck) Sacc.*

1 Specimens from the type collection. x 1.
2 Hyphae from the trama and the subiculum.
3 Mature spores.
4 Microphotograph of cross section of the hymenium. x 160.



PORIA ODORA (Peck) Sacc.

Plate 14

Poria ornata *(Peck) Sacc.*

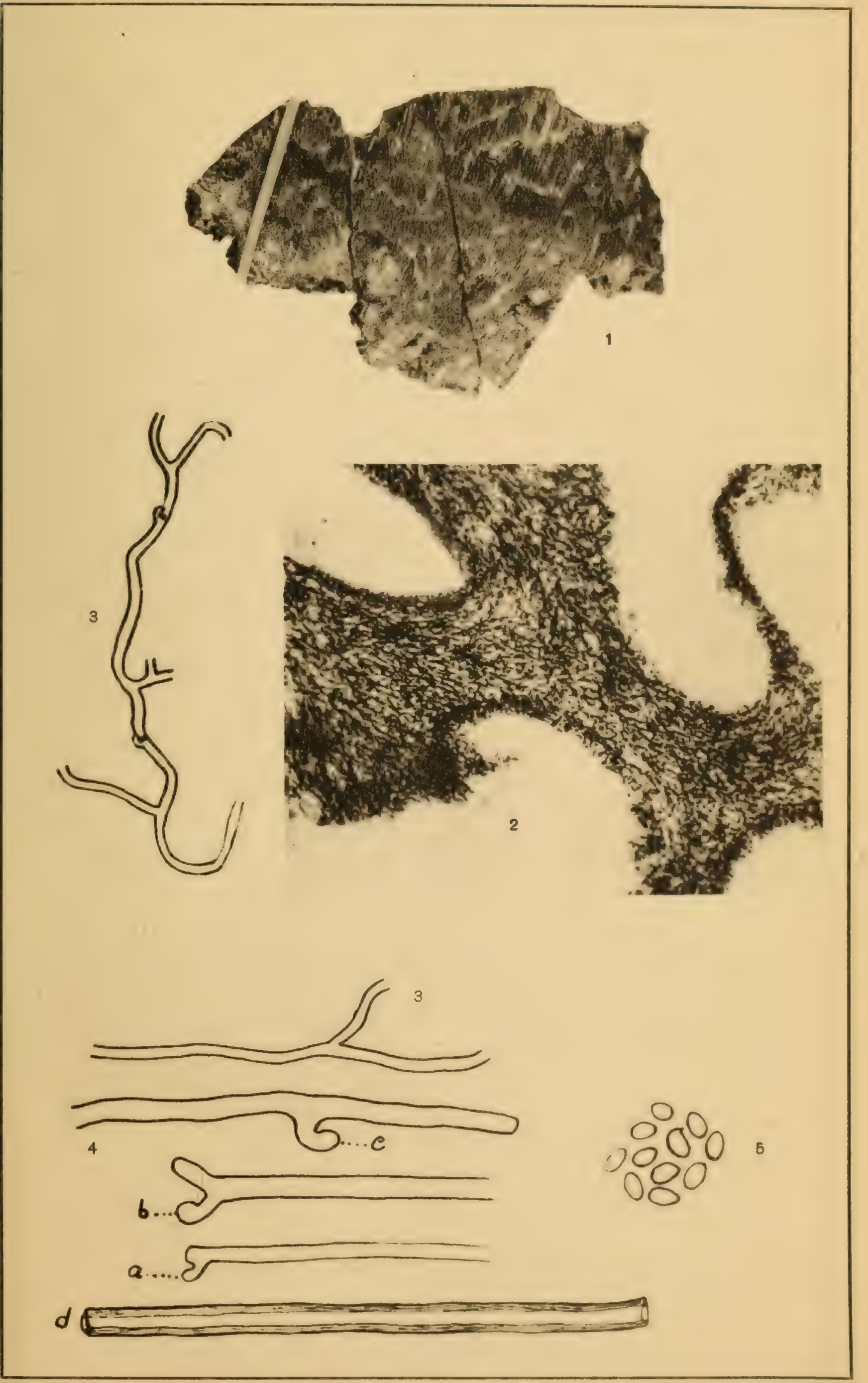
1 Specimens in the type collection. x 1.

2 Microphotograph of a partially oblique section through the hymenium. x 160.

3 Hyphae from the trama.

4 Hyphae from the subiculum, showing the knoblike outgrowths sometimes present (a, b, c), and the heavy walls characteristic of many hyphae (d).

5 Mature spores.

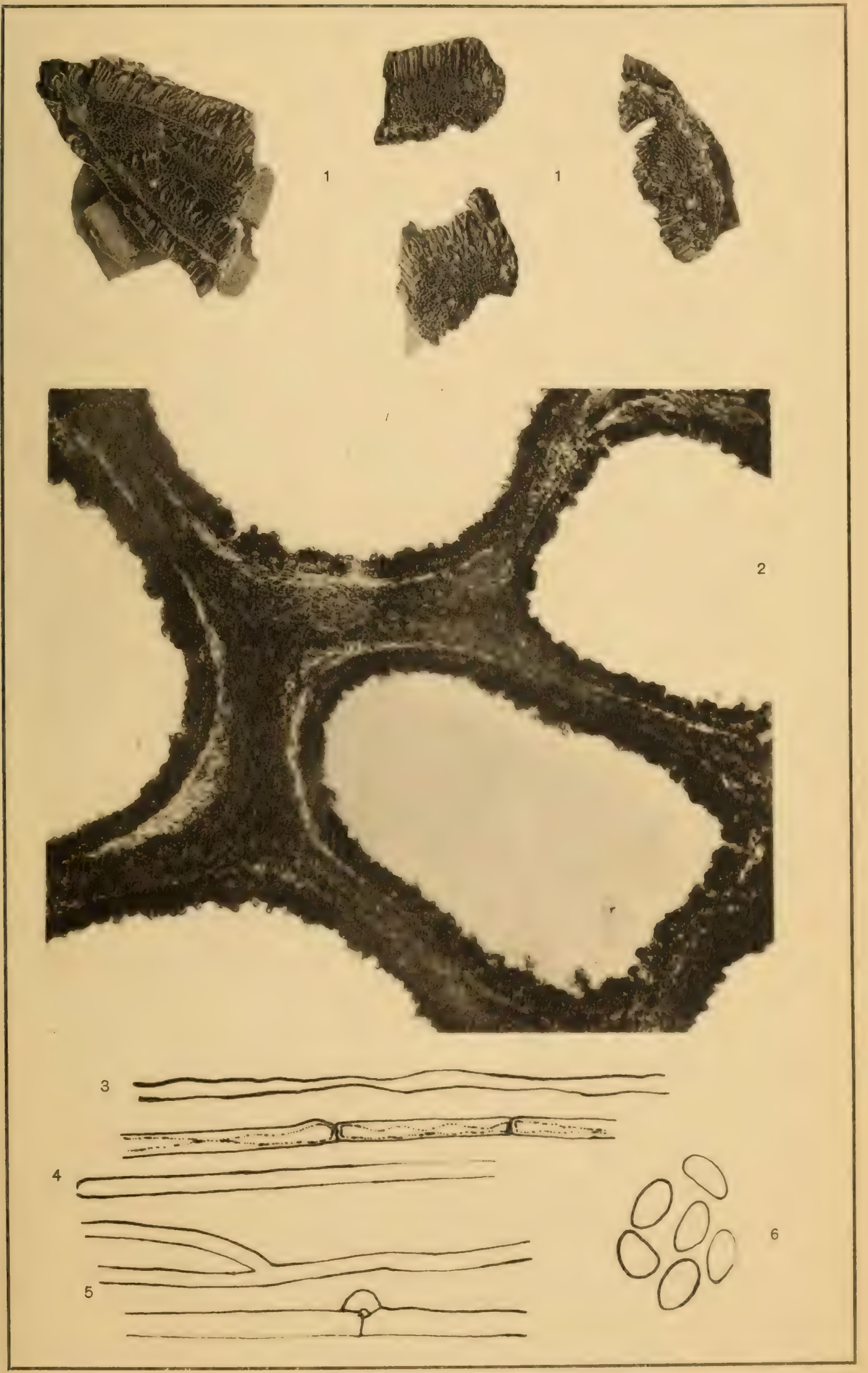


PORIA ORNATA (Peck) Sacc.

Plate 15

Poria pinea *(Peck) Sacc.*

1 Specimens from the type collection. x 1.
2 Microphotograph of a cross section of the hymenium. Lines of clevage are apparent between trama and hymenial layers. x 160.
3 Hypha from the trama.
4 Hyphae from the trama.
5 Hypha from the subiculum, with clamp connection.
6 Mature spores.

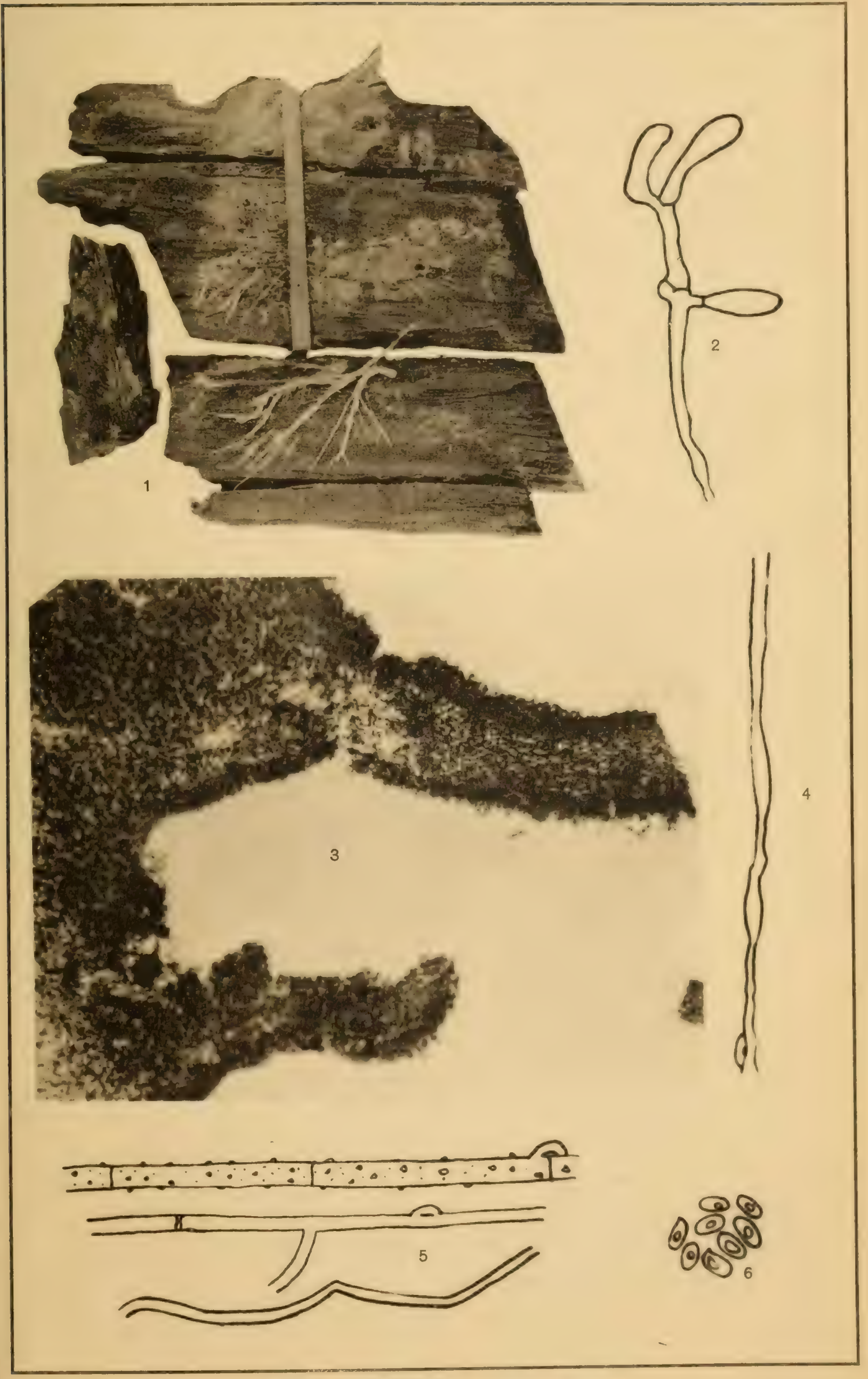


PORIA PINEA (Peck) Sacc.

Plate 16

Poria radiculosa *(Peck) Sacc.*

1 Major portion of the material in the type collection. x 1.
2 Immature basidia.
3 Microphotograph of vertical section through the hymenium. x 160.
4 Hyphae from the subiculum.
5 Hyphae from the trama.
6 Mature spores.



PORIA RADICULOSA (Peck) Sacc.

Plate 17

Poria semitincta (*Peck*) *Sacc.*

1 Specimens from the type collection. x 1.
  a Growing on the surface of a dead fallen leaf.
  b Growing on rotten wood.

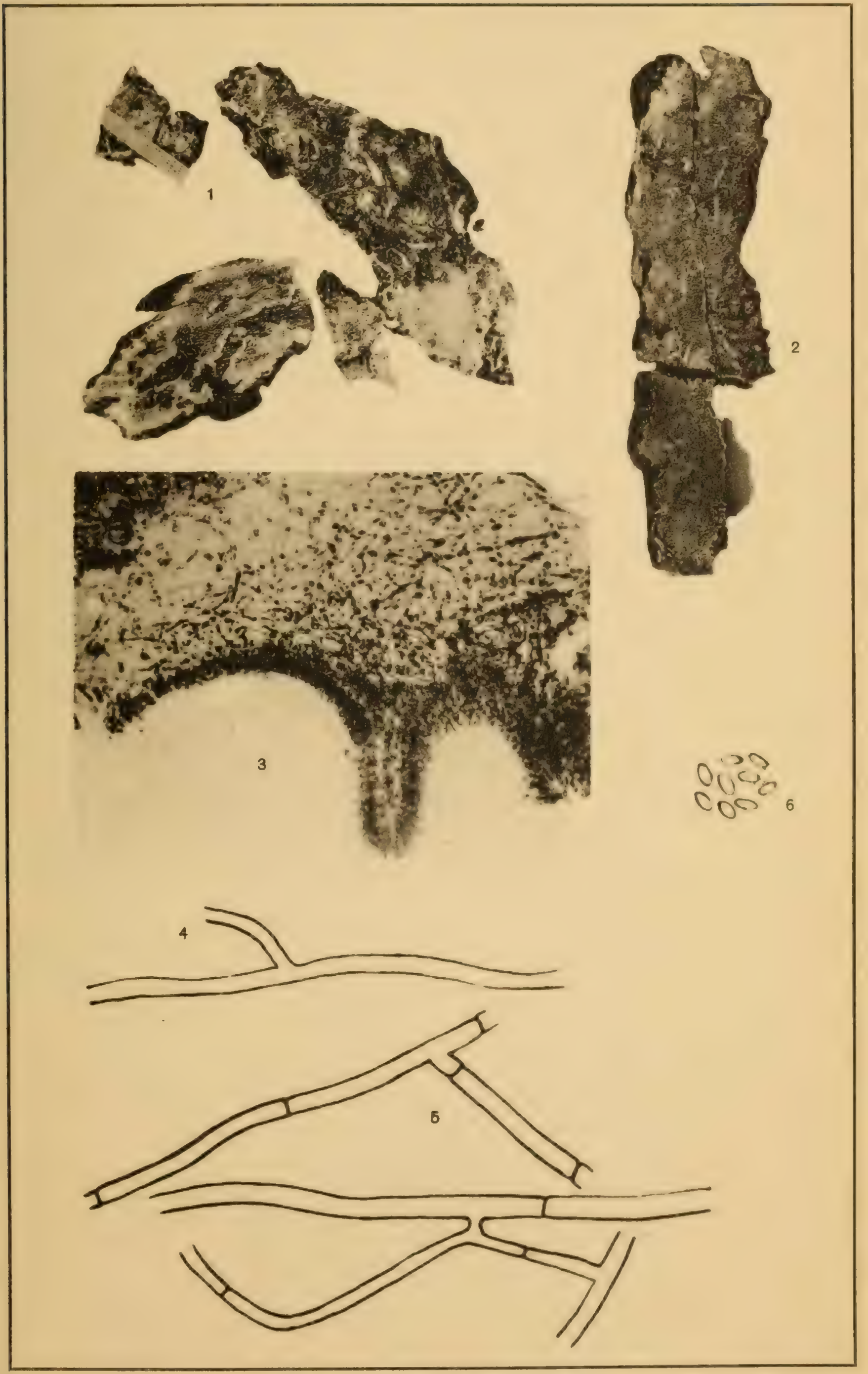
2 Specimen in New York State Museum herbarium, collected at South Bethlehem, N. Y. x 1.

3 Microphotograph of vertical section through hymenium. x 160.

4 Single hypha from the trama.

5 Hyphae from the subiculum and the growing margin. This type also represented in the trama.

6 Mature spores.



PORIA SEMITINCTA (Peck) Sacc.

Plate 18

Poria setigera *Peck*

1 Mature specimens from the type collection. x 1.

2 Young specimens from the type collection, showing the broad sterile margin and the covering of hairlike setae. x 1.

3 Vertical section through the hymenium and subiculum showing the setalike bodies projecting into the lumen of the tubes and embedded in the trama. At *a* are projecting setae of the usual type. x 160.

4 Enlargement of a part of the specimen (at X) shown in figure 2, showing the bristlelike projecting hairs. x 10. Photographed with the aid of a Bausch and Lomb Micro-Tessar lens.

5 One of the large embedded setae.

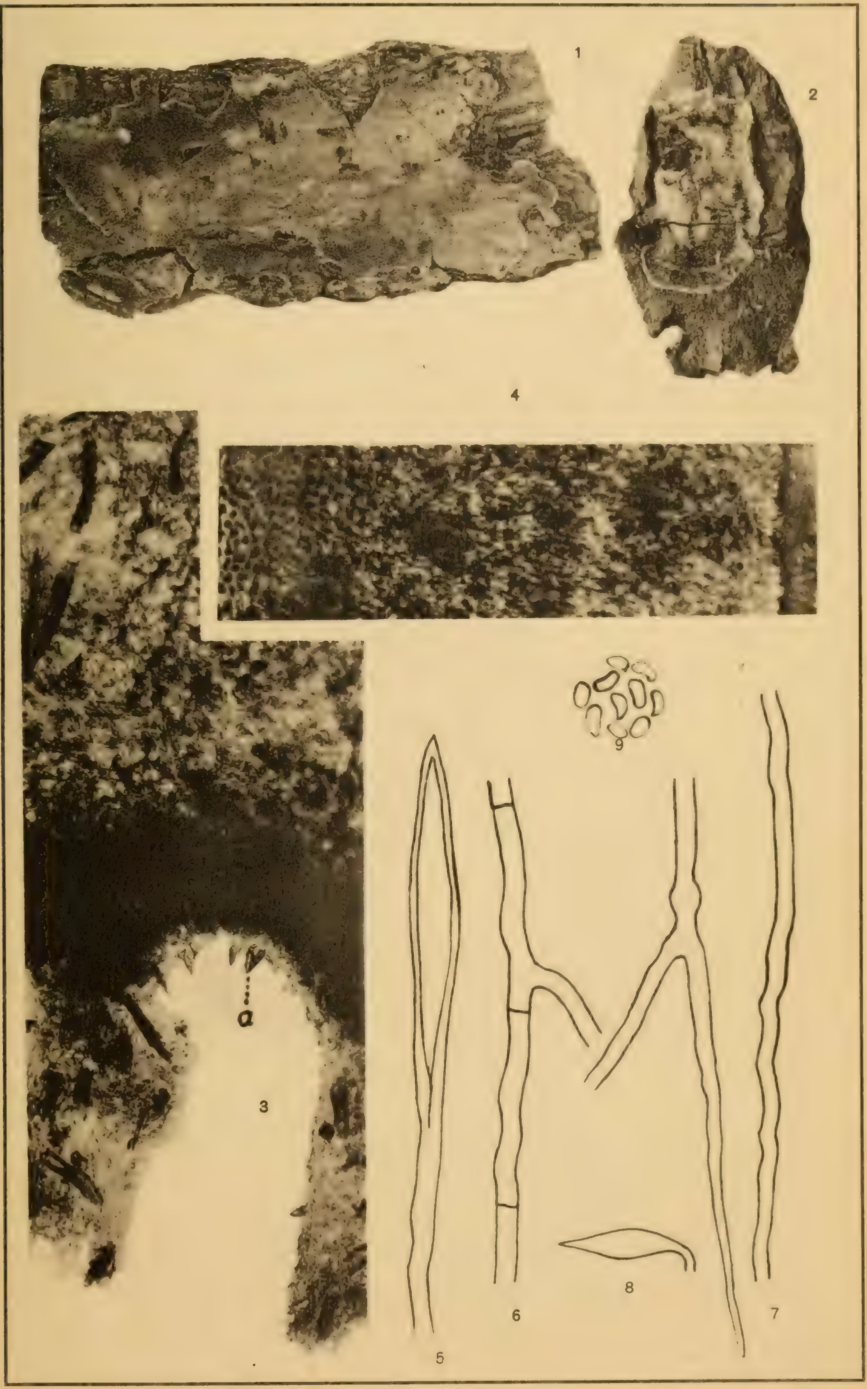
6 Hypha from the subiculum.

7 Hypha from the trama.

8 A small seta of the usual type, from teased preparations.

9 Mature spores.

PLATE 18



PORIA SETIGERA Peck

Plate 19

Poria subacida *(Peck) Sacc.*

1 Specimen from the type collection. x 1.

Poria subacida var. stalactitica *Peck*

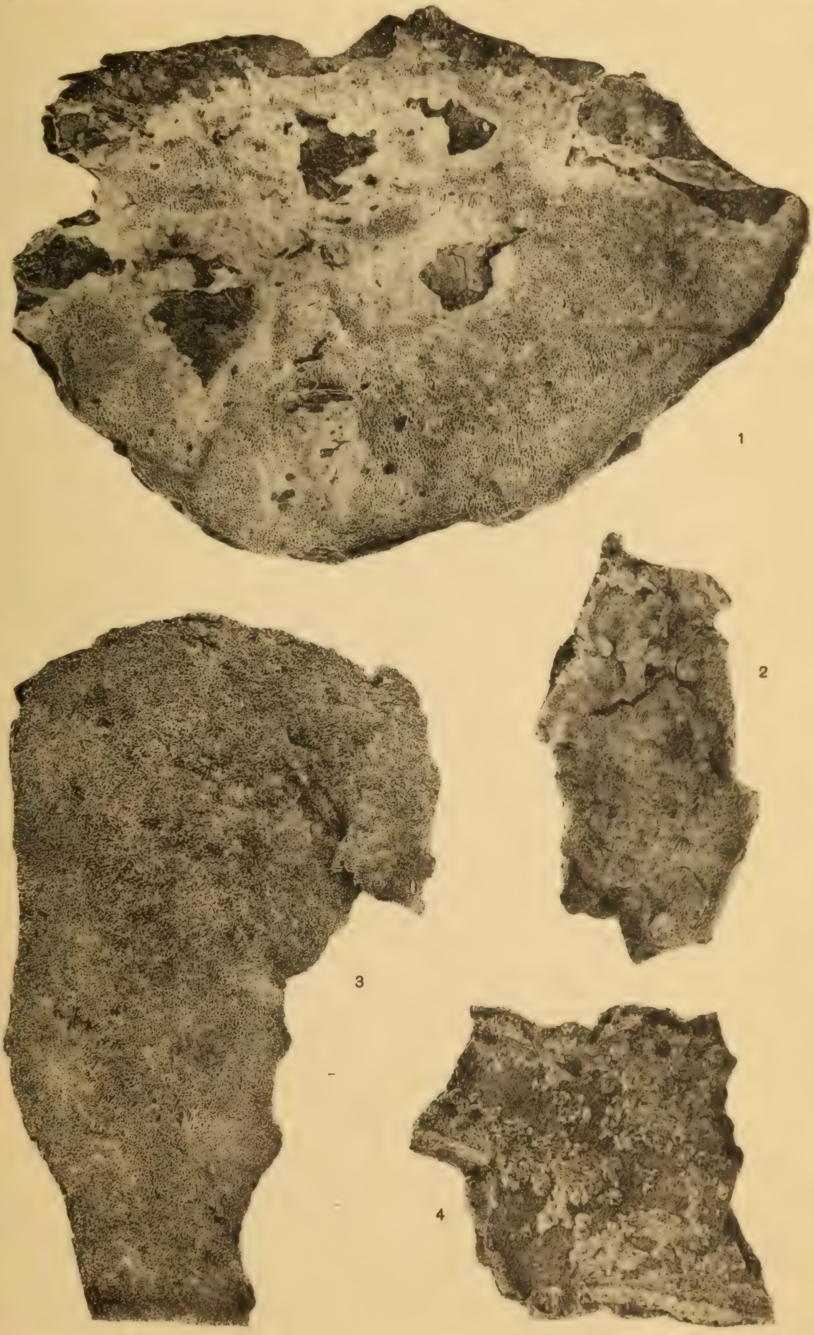
2 Specimen from the type collection. x 1.

Poria subacida var. vesiculosa *Peck*

3 Specimen from the type collection. x 1.

Poria subacida var. tuberculosa *Peck*

4 Specimen from the type collection. x 1.



PORIA SUBACIDA (Peck) Sacc.

Plate 20

Poria subacida *(Peck) Sacc.*

1 Microphotograph of cross section of the hymenium from specimen in the type collection. x 160.

2 Microphotograph of cross section of the hymenium from specimens in the New York State herbarium, collected by C. H. Peck at Floodwood, N. Y. x 160.

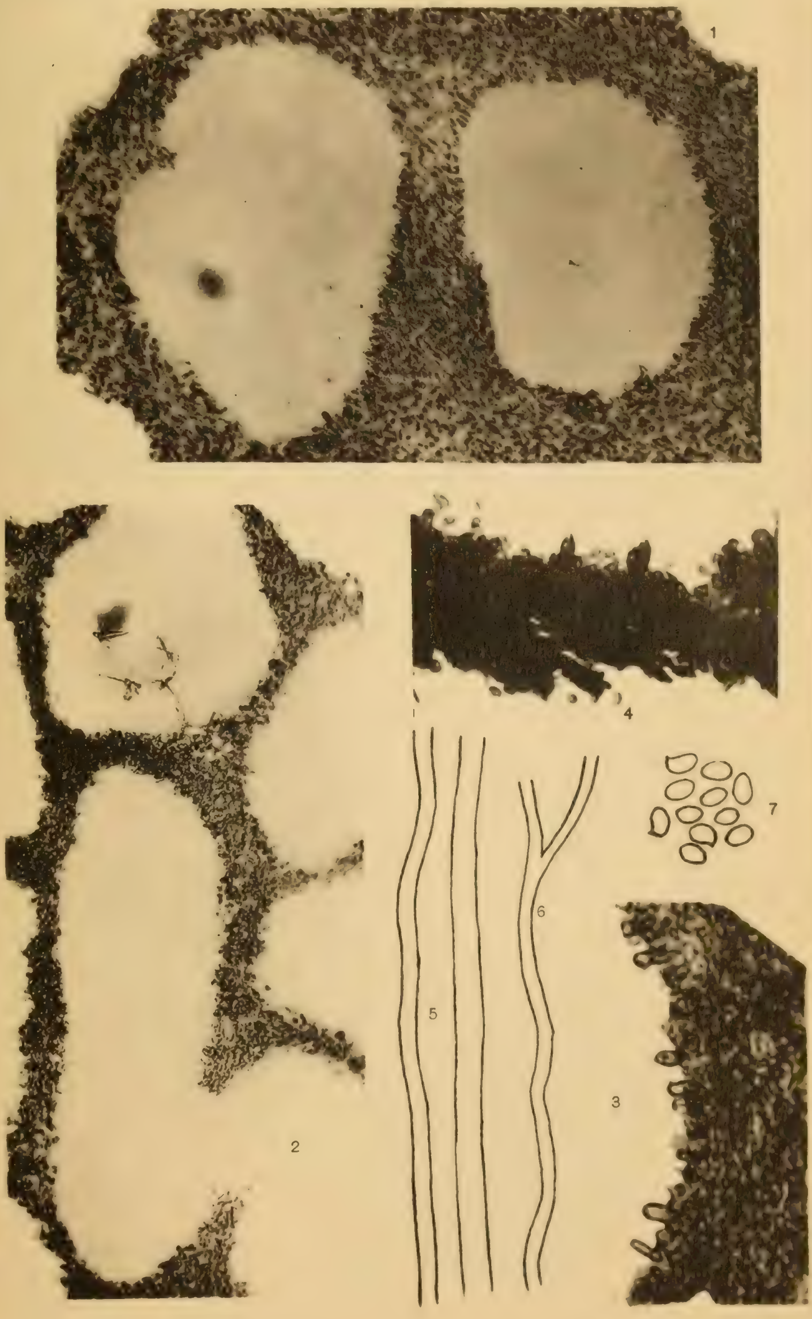
3 Enlarged microphotograph of a small part of the hymenium of Poria subacida var. tenuis Peck, from specimens in the type collection, showing projecting cystidialike bodies. x 320.

4 Enlarged microphotograph of a small part of the hymenium of P. subacida, showing cystidialike bodies. x 320.

5 Hyphae from the subiculum.

6 Hyphae from the trama.

7 Mature spores.



PORIA SUBACIDA (Peck) Sacc.

Plate 21

Poria subiculosa *(Peck) Sacc.*

1 Specimen from the type collection. x 1.
2 Microphotograph of cross section of the hymenium. x 160.
3 Hyphae from the trama.
4 Hypha from the subiculum.
5 Mature spores.

Poria subacida var. tenuis *Peck*

6 Specimen from the type collection. x 1.

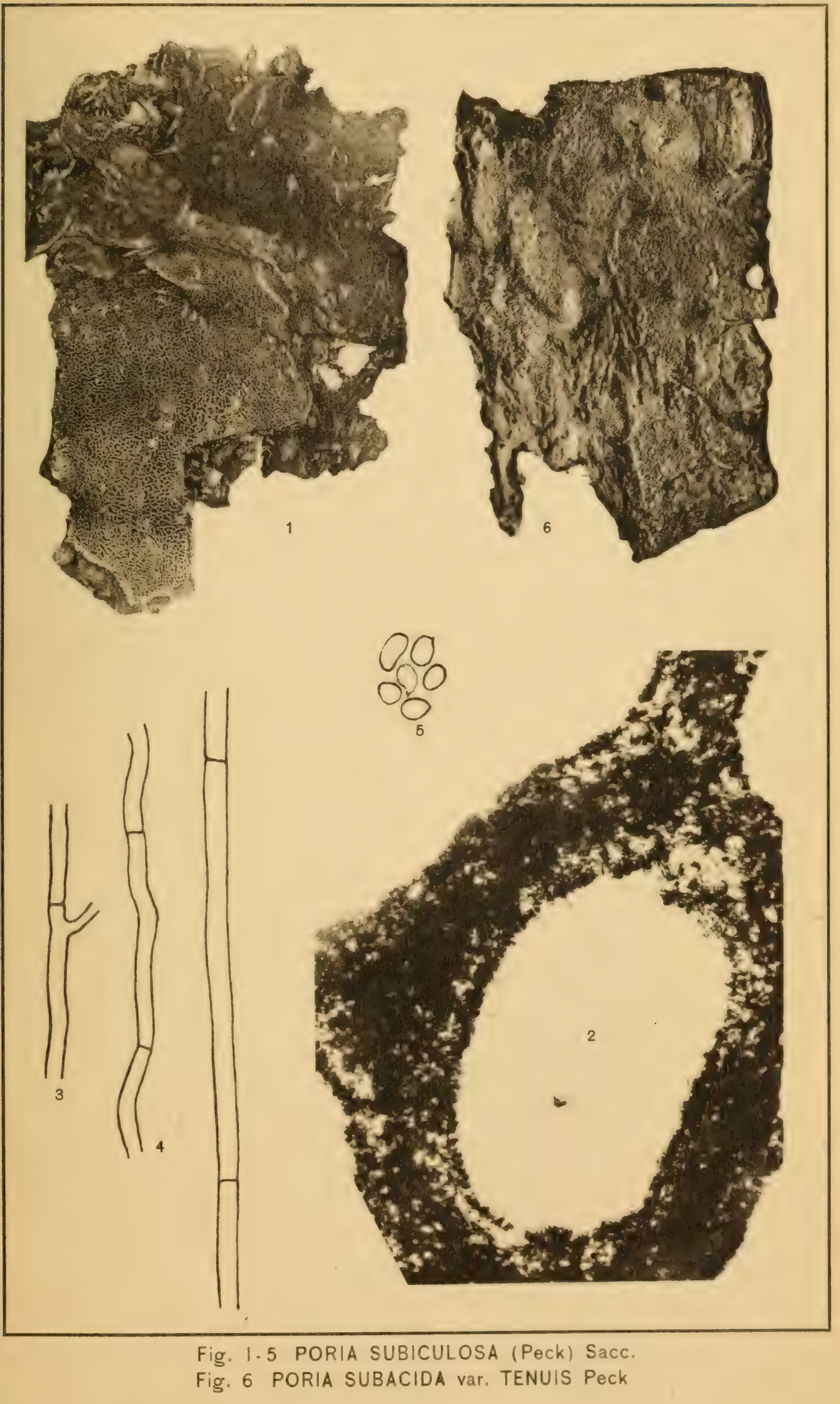


Fig. 1-5 PORIA SUBICULOSA (Peck) Sacc.
Fig. 6 PORIA SUBACIDA var. TENUIS Peck

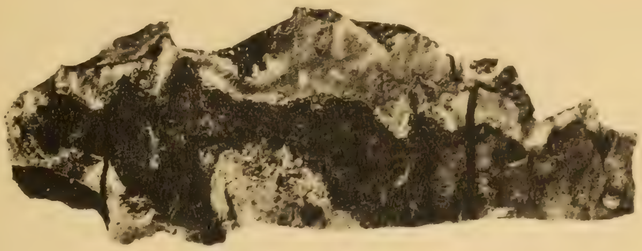
Plate 22

Poria sulphurella *(Peck) Sacc.*

1 Specimen from the type collection. x 1.
2 Microphotograph of cross section of the hymenium. x 160.
3 Hypha from the subiculum.
4 Hyphae from the trama.

Poria fimbriatella *(Peck) Sacc.*

5 Specimen from the type collection. x 1.



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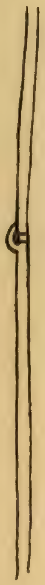

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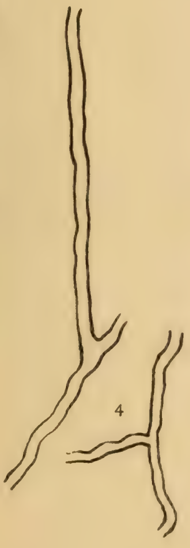

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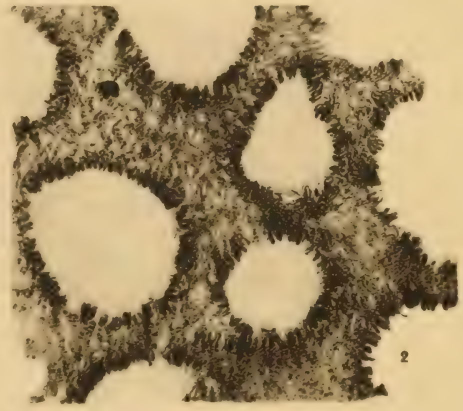

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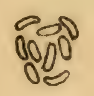

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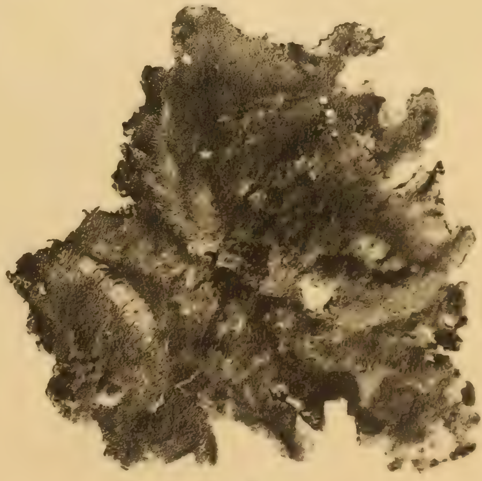

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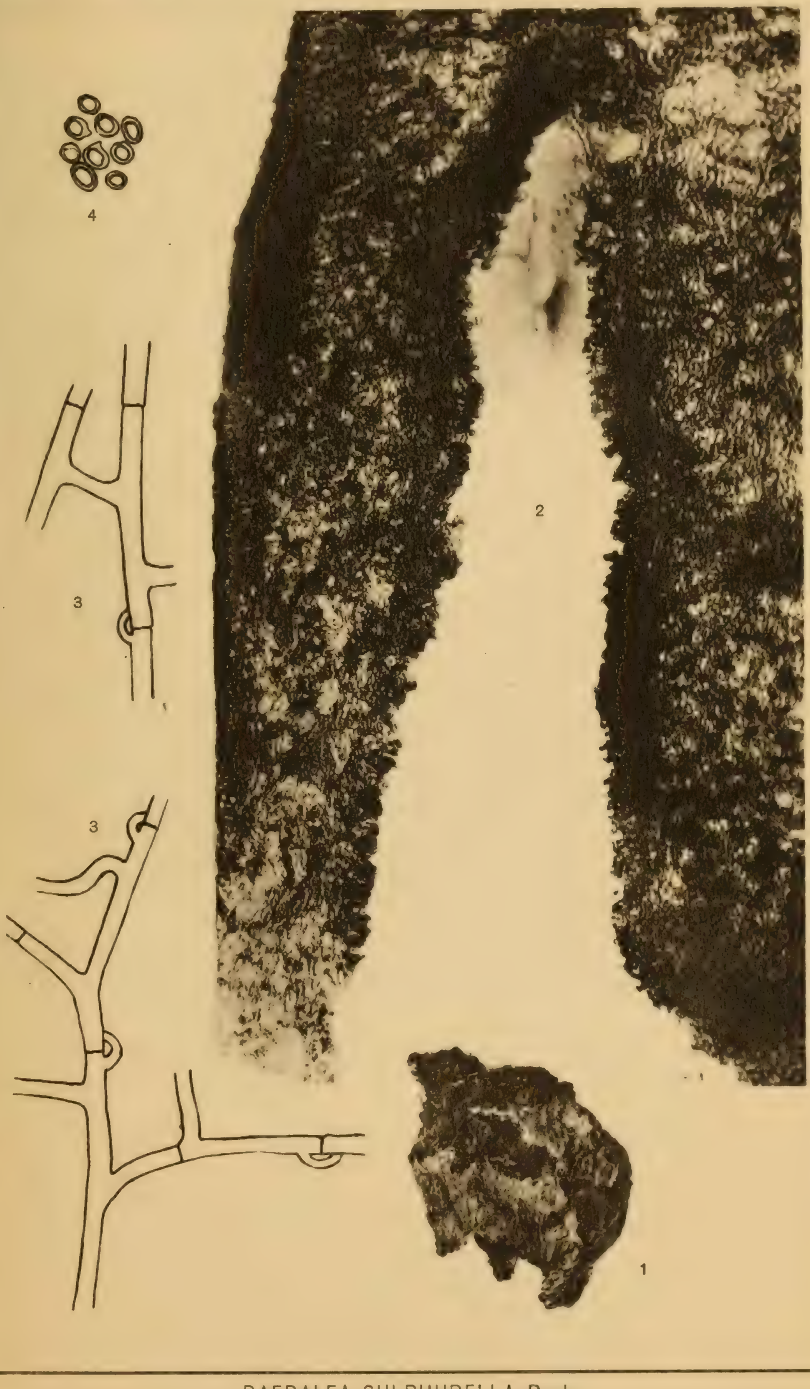
Fig. 1-5 PORIA SULPHURELLA (Peck) Sacc.
Fig. 6 PORIA FIMBRIATELLA (Peck) Sacc.

Plate 23

Daedalea sulphurella *Peck*

1 Photograph of small fragments from the type collection. x 2.
2 Microphotograph of vertical section through the hymenium. x 160.
3 Hyphae from the subiculum.
4 Mature spores.



DAEDALEA SULPHURELLA Peck

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